

APPENDIX A: Clean Air Act Regulatory Summary

Overview

Kraft pulp mills are subject to a variety of different requirements under the Clean Air Act (CAA), and state and local laws. These requirements are designed to limit emissions of several different air pollutants. Most of those requirements will apply separately to each specific point of emission, although some process-based or facility-based limits may apply as well. For many of these emission limits, the regulations and permit-specific requirements will establish associated monitoring, reporting and recordkeeping (MRR) requirements to provide an assurance of ongoing compliance with the emission limits. This appendix first outlines the basic elements of the air program and then summarizes how the air program affects kraft pulp mills.

Outline of Regulatory Programs

National Ambient Air Quality Standards

The CAA is designed to protect the public health and welfare. The centerpiece of the CAA are the national ambient air quality standards (NAAQS) that have been established for six "criteria" pollutants: carbon monoxide, lead, nitrogen dioxide, particulate matter, ozone and sulfur dioxide.

Areas that meet the NAAQS are called "attainment" areas; those that do not, are called "nonattainment" areas. Each State, through a State implementation plan (SIP), is responsible for developing strategies to achieve attainment within the State.

Primary NAAQS Impacts Related to Kraft Pulp Mills:

- ! **Particulate Matter**
- ! **Ozone (Emissions of VOC and NO_x)**
- ! **SO₂**

SIPs

A SIP will include all of the elements of a State's strategy to attain the NAAQS, including emission limits, permitting requirements, mobile source restrictions and so on. The EPA approves the SIP. If EPA finds that a SIP fails to adequately achieve attainment, EPA can issue a "SIP Call" to the affected State(s) to correct the deficiency and can impose direct federal requirements (a federal implementation plan or "FIP") if the SIP remains inadequate. The basic federal requirements for a SIP are set forth in 40 CFR Part 51.

Not all emission limit requirements established by a State will be part of a SIP -- only those designed to attain the NAAQS. Thus, requirements designed to solve local problems -- such as general nuisance, odor, open burning and air toxic regulations -- often

are not included within a SIP. This distinction is important for compliance assessment purposes because the State requirements that are included in the SIP are federally-enforceable while State-only requirements are enforced only by the State agencies (including implementing local agencies if applicable).

A required element of each SIP will be a process for reviewing, prior to construction, any new or modified source of air pollution to assure that the emissions from that source will not interfere with the State's implementation strategy or cause an exceedance of the NAAQS. These programs are generally referred to as "New Source Review" (NSR). As explained below, special NSR requirements apply to certain "major" sources.

Another common element of a SIP are emission limitations and standards. These limits will generally be structured in three different ways:

- ! Noncategorical limits
- ! Source category-specific limits
- ! Source-specific limits

Noncategorical limits apply to all sources of particular types of pollutants, although States will often treat combustion units and process units separately. For most States, the limits will at least cover particulate matter and SO₂ emissions. Requirements for other pollutants often either apply more narrowly to specific types of sources or are otherwise more limited in scope. For particulate matter, the two most common types of standards will be generic opacity standards (expressed as percent opacity) and mass emission limits (expressed usually as allowable weight of total suspended particulates (TSP) per million Btu of heat input or allowable TSP concentration per weight or volume of stack gas emitted). For SO₂, mass emission limits often will be expressed on a lb/hour or lb/million Btu basis, and specific limits on the sulfur content of fuel for combustion sources also will apply in most States.

Categorical limits are standards established for specific industries that will apply in addition to the general, non-categorical emission limits. Many of the States with operating kraft pulp mills have adopted these types of standards, especially for TRS emissions, but also for particulate matter and SO₂ in some States as well. However, as noted above, control of odorous emissions, such as TRS, is generally not considered SIP-related. Thus, State emission limits for TRS emissions from kraft pulp mills likely will not be considered part of a State's SIP.

The third type of limit that may apply is a site-specific emission limit directly adopted into a SIP. These limits generally are used where a source has a significant impact on attainment, including situations where the source by itself can cause a particular area

**Primary SIP Requirements
Related to Kraft Pulp Mills:**

- ! Visible emission regulations
- ! Sulfur-in-fuel limits
- ! PM/SO₂ mass emission limits
- ! NO_x RACT/NO_x regional ozone transport reduction strategies
- ! Specific pulp mill standards

within a State to be classified as nonattainment. Because these limits are site-specific, any such limits that apply to kraft pulp mills are not addressed or summarized in this manual.

An additional SIP consideration is the control of ozone precursors for ozone attainment purposes. Prior to the 1990 amendments to the Clean Air Act, ozone attainment strategies focused on controlling emissions of volatile organic compounds (VOC). The 1990 amendments generally required that States with ozone nonattainment areas modify their control strategies to include nitrogen oxide (NO_x) emission controls in addition to VOC controls. Therefore, since the 1990 amendments, many States with ozone nonattainment areas have developed NO_x limits for existing sources, especially combustion sources. These standards are generally based on "reasonably available control technology" (RACT). Some areas of the country, most notably the Mid-Atlantic/Northeast region, have developed emission trading programs as a least-cost compliance tool for achieving NO_x emission reductions beyond the RACT levels of control. To address regional NO_x transport, EPA is currently considering additional NO_x reductions for a 22-State region in the eastern U.S., including States that currently are in attainment with the ozone standards. Because of the significant on-site power generation and other combustion sources at a pulp mill, State NO_x requirements may apply to pulp mills in those States that have ozone nonattainment areas or that are affected by EPA's regional transport initiatives.

Finally, although technically not part of a SIP, under section 111(d) of the CAA, States are required to submit regulations for existing sources of certain non-criteria pollutants that are regulated under the New Source Performance Standards (NSPS). One such pollutant, TRS, is emitted from kraft pulp mills. Many States with kraft pulp mills have TRS regulations that have been approved under section 111(d). Other States have adopted TRS regulations that are not considered section 111(d) regulations, but are considered as State-only requirements. This distinction is important for compliance assessment purposes because only the section 111(d) requirements will be federally enforceable.

New/Modified Sources

Each State must have an NSR procedure in place as part of a SIP. In addition, for new major sources (or modifications to a major source that result in a significant emission increase), EPA requires more specific elements for an NSR program. These requirements vary depending on whether the source is located in an attainment or nonattainment area for the pollutant(s) that trigger NSR review.

- ! *In attainment areas*, major NSR involves a strategy to prevent significant deterioration (PSD) of air quality. The PSD NSR program involves pre-construction permitting in which the source must demonstrate that the project will not cause a violation of the NAAQS or PSD increments (air quality concentrations established to keep clean air clean). For projects located near designated "Class 1" areas (e.g., national parks), the source must also document that the project will not interfere with certain air quality related values such as visibility. Finally, the PSD permit must establish an emission limit that reflects the use of "best available control technology" (BACT) at the new/modified source.

- ! *In nonattainment areas*, major NSR focuses on assuring that the source achieves the lowest achievable emission rate (LAER) and obtains emission offsets so that the nonattainment problem is not made worse by the addition of the new/modified source.

In addition to these permit-based requirements, EPA has promulgated new source performance standards (NSPS) for many types of new/modified industrial sources. The NSPS apply to specific units at various source categories (such as lime kilns and recovery furnaces at kraft pulp mills, fuel gas combustion devices at petroleum refineries, etc.). The standards are based on the best available technology (BAT), taking environmental, energy and economic factors into account, that has been commercially demonstrated. The NSPS apply to all facilities

constructed/modified after the date the NSPS is proposed in the Federal Register. The NSPS act as a floor in the context of NSR permitting (i.e., BACT, LAER or minor source NSR requirements must be at least as stringent as an applicable NSPS). The EPA has established NSPS requirements (summarized in Sections 4 and 5 of the manual) that are applicable to several process units at kraft pulp mills that are constructed/modified on or after September 24, 1976. In addition, the NSPS establish a number of requirements applicable to steam and power generating facilities (summarized in Section 8 of the manual).

**Primary NSPS/NSR Requirements
Related to Kraft Pulp Mills:**

- ! **NSPS Subpart BB standards for kraft pulp mill process units**
- ! **NSPS Subparts D, Db, Dc standards for power boilers**
- ! **Minor and Major NSR permitting requirements (primarily SO₂, NO_x and PM)**
- ! **Additional controls mandated by the Cluster Rules could potentially increase SO₂ emissions and trigger major NSR permitting for some mills**

Hazardous Air Pollutants

NESHAP/MACT standards. Under section 112 of the CAA, EPA is authorized to regulate hazardous air pollutants. These requirements are separate from control requirements designed to achieve attainment with the NAAQS. Prior to the 1990 amendments, EPA promulgated relatively few standards (called National Emission Standards for Hazardous Air Pollutants or "NESHAP") for these pollutants. Prior to the 1990 amendments, the stringency of a NESHAP emission limit was based on health risk considerations -- not available technology. The 1990 amendments required EPA to establish NESHAP generally on "maximum available control technology" (MACT), with a subsequent review of the residual risk from a source category after implementation of the MACT requirements.

Under the pre-1990 NESHAP standards, EPA has not promulgated any standards specifically applicable to kraft pulp mills. However, two standards -- Subpart M (asbestos) and Subpart E (mercury) may apply. The asbestos NESHAP will apply to any demolition or renovation activity at a mill that will disturb a significant amount of asbestos-containing material. The mercury NESHAP applies to any sludge dryers or incinerators used to treat industrial wastewater treatment sludges.

**Primary HAP/Other CAA Requirements
Related to Kraft Pulp Mills:**

- ! **The Cluster Rules MACT Standards (Pulping and Bleaching)**
- ! **Proposed MACT Standards (Chemical Recovery)**
- ! **Asbestos NESHAP (Demolition and Renovation Activities)**
- ! **Mercury NESHAP (Sludge Incinerators/Dryers)**
- ! **Section 112(r) Risk Management Plans**
- ! **Section 111(d) and State-only TRS rules**

Under the post-1990 MACT standards, EPA has promulgated a number of standards, including requirements for pulp mill pulping and bleaching operations as part of the Cluster Rules (see 63 FR 18503, April 15, 1998). At the same time, EPA proposed MACT requirements for pulp mill chemical recovery operations (see 63 FR 18753).

In addition to federal hazardous air pollutant standards, some States have developed their own air toxics regulations. Some of these may apply to kraft pulp mills, including State rules applicable to bleaching operations (see Section 6).

Risk management plans.

Another requirement based on the 1990 Clean Air Act Amendments is the requirement to develop and maintain a Risk Management Plan (RMP) under section 112(r) of the

Act. The EPA has promulgated regulatory criteria and procedures applicable to RMPs at 40 CFR Part 68. Under those regulations, kraft pulp facilities in SIC Code 2611 are subject to the most stringent RMP requirements (so-called "Program 3" requirements). The main elements of the RMP include:

NOTE! See <http://www.epa.gov/swercepp> for EPA guidance on section 112(r) RMP compliance.

- ! An executive summary
- ! A registration form with basic facility, contact and other pertinent data
- ! Offsite consequence analyses based on worst-case scenarios for all regulated toxic and flammable substances
- ! A five-year accident history
- ! A prevention program. The program must include process safety information (for each process, safety-related data pertaining to: the hazards of the regulated substances used, the technology used, and the equipment used). The program must

also include information on process hazard analyses (PHAs) conducted by the mill, compliance audits, and other internal checking measures

- ! An emergency response program, including information on the emergency response plan developed by the mill and emergency response training for employees

Because mills are subject to the Program 3 requirements, additional prevention program requirements apply, including:

- ! Written operating procedures that provide clear instructions for operating all processes safely
- ! Initial and refresher safety and health hazards training for all employees involved with process operations
- ! Mechanical integrity requirements for critical process equipment (including written operating procedures, training requirements, inspection and testing requirements, and corrective action and quality assurance obligations)
- ! Procedures for addressing new safety and health issues as part of changes in operations (including changes to process chemicals, equipment, technology or procedures)
- ! Pre-startup review of safety and health issues
- ! Compliance audits for compliance with RMP requirements at least every 3 years
- ! Incident investigation procedures for any incidents that did involve or could have involved a catastrophic release of a regulated substance

Compliance with the RMP requirements may be delegated by the State air permitting agency to a separate State or local agency -- most air agencies will likely delegate implementation of the RMP program to State or local agencies directly involved with emergency response issues. For all sources, the delegated agency must verify that the required RMP has been registered and submitted, and that the source has submitted either a compliance certification or a compliance schedule related to RMP requirements. Also, for at least some of the sources, each delegated agency must use a procedure such as a completeness check, source audit, record review or source inspection to ensure that sources are in compliance. Where deficiencies in an RMP are found, the regulations allow the agency to issue a preliminary determination of what changes are necessary, followed by an opportunity for the source to respond and suggest alternative changes, and then a final determination by the agency as to what changes are necessary.

Title V Permitting

Prior to the 1990 amendments to the CAA, there was no federal requirement for a source to obtain and maintain an air operating permit. Title V of the 1990 amendments established a requirement for an air program operating permit similar to the NPDES permit required under the Clean Water Act. The concept of the permit is to consolidate all applicable requirements into a single document and to clarify (and potentially streamline) requirements that are vague or overlapping. Because of their size, all kraft pulp mills will have to obtain Title V operating permits.

Primary Title V Requirements Related to Kraft Pulp Mills:

- ! Consolidate applicable requirements in a single permit**
- ! Application will include emission and control device information, as well as general process information**
- ! Periodic monitoring and compliance assurance monitoring requirements may impose new monitoring requirements on various emissions units, especially units subject to particulate matter limits**

One area of Title V permitting that is likely to affect kraft pulp mills is the periodic and compliance assurance monitoring requirements that are being implemented through the permitting process. These requirements may add monitoring requirements for many kraft pulp mill units -- especially for circumstances (e.g., smaller controlled units) where no on-going monitoring may have been conducted in the past. For these units, a mill will likely have to develop some form of control device parameter monitoring with established parameter excursion levels established for reporting purposes.

Title VI Stratospheric Ozone Protection

Title VI of the Act establishes certain restrictions on the manufacture, use and disposal of ozone-depleting substances, including chlorofluorocarbons (CFCs). Among other aspects of this program, section 608 of the Act establishes a comprehensive program to limit emissions of CFCs and other ozone-

Primary Title VI Requirements Related to Kraft Pulp Mills:

- ! Leak repair obligations for industrial process refrigeration units (e.g., chlorine dioxide plant chillers)**

depleting substances during the maintenance, service, repair, and disposal of air conditioning and refrigeration equipment that contains these materials. EPA's implementing regulations impose technician certification and technician work practice requirements. The regulations also establish equipment and reclaimer certification programs, and disposal restrictions. Finally, for owners of covered equipment, there are leak repair requirements as well. This last requirement is the key element for kraft pulp mills that may operate industrial process refrigeration units, such as chillers for chlorine dioxide plants.

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APPENDIX B: Clean Water Act Regulatory Summary

Overview

The Clean Water Act (CWA) gives EPA the responsibility and authority to regulate most forms of water pollution in the United States and its Territories. Discharges of pollutants into the nation's waters are regulated by several CWA programs, including the National Pollutant Discharge Elimination System's (NPDES) permitting program for point-source discharges, the storm water permitting program (a sub-category of NPDES) for all storm water discharges from point sources, and a pretreatment program which establishes pretreatment standards for discharges by industrial users into Publicly Owned Treatment Works (POTWs). The EPA has developed specific requirements for kraft pulp manufacturing operations as described below.

NPDES Permitting

The NPDES permitting program, outlined primarily in 40 CFR Part 122, establishes permitting requirements for the discharge of pollutants from point sources into waters of the United States. The scope of the NPDES program is quite broad, and as a practical matter most point source discharges associated with the pulp and paper industry will be subject to NPDES permitting requirements. The program is administered either by EPA or the State in which a facility is located. EPA may authorize a State to administer the NPDES permitting program upon a showing that the State's program is at least as strict as the federal program, and that the State has adequate legal authority to implement and enforce the NPDES program. The vast majority of States now have federally approved NPDES permitting programs.

NPDES permits typically incorporate five components:

- ! Technology-based effluent limitations
- ! Water quality-based effluent limitations
- ! Monitoring and reporting requirements
- ! Standard conditions applicable to all permittees
- ! Special conditions developed on a site-specific basis by the permitting authority

Technology-based effluent limitations are defined by industry-specific guidelines contained in the Code of Federal Regulations, and are designed to reflect actual production (if mass-based) at a facility. The pulp and paper regulations [40 CFR 430] provide specific definitions of production; see Section 7.3.4.

Types of pollutants limited by the technology-based standards include "toxic pollutants" listed in 40 CFR 401.15, "conventional pollutants" (BOD₅, TSS, pH, fecal coliform, and oil and grease), and "nonconventional pollutants" (pollutants that are neither

toxic nor conventional). Potential pollutants of concern for kraft pulp mills as reflected in the effluent limitations guidelines and standards promulgated by EPA and in a sampling of NPDES permits, are summarized in Figure B-1.

Figure B-1
Regulated Pollutant Parameters for Kraft Pulp Facilities

Effluent Guidelines/ Standards	Other Potential Permit- Specific Parameters
BOD ₅	Total cadmium
TSS	Total mercury
pH	Total silver
Pentachlorophenol	Total zinc
Trichlorophenol	Total copper
AOX	Lead
Chloroform	Mercury
2, 3, 7, 8-TCDD	Temperature and thermal load
2, 3, 7, 8-TCDF	Dissolved oxygen
Chlorinated phenols (12 pollutants)	Total phosphorous
	Ammonia
	Aluminum
	Color
	COD

Guides to the technology-based standards and their application are contained in Figures B-2 and B-3. See Sections 6 and 7 of this manual for a discussion of the relevant effluent limitations guidelines and standards established for kraft pulp mills.

Water quality-based effluent limitations (WQBELs) apply in situations where the technology-based standards are insufficient to protect water quality. All receiving waters have ambient water quality standards which are established by the States or EPA in accordance with federal regulations to maintain and protect designated uses of the receiving water (e.g., aquatic life-warm water habitat, public water supply, and primary contact recreation). States can use the total maximum daily load (TMDL) process to quantify the allowable pollutant loadings in receiving waters, based on the relationship between pollution sources and in-stream water quality standards.

Some permitting authorities may find that the application of the technology-based effluent limitations guidelines result in pollutant discharges that still cause exceedances of the water quality standards in particular receiving waters. In such cases, permitting authorities are required to develop more stringent WQBELs for the pollutant to ensure that the water quality standards are met. For a description of how water quality standards are developed and incorporated into permits, refer to *Guidance for Water Quality-Based Decisions: The TMDL Process* (EPA 440/4-91-001) and *Technical Support Document for Water Quality-Based Toxics Control* (EPA/505/2-90-001).

Figure B-2
Technology-Based Regulations: A Guide to the Acronyms

BPT	=	"Best Practical Control Technology Currently Available," a baseline standard, applicable in all circumstances to all pollutants.
BCT	=	"Best Conventional Pollutant Control Technology," potentially more stringent limitations for conventional pollutants than BPT. Only applies if certain cost tests are met. Must be "cost-reasonable." <u>See</u> 51 Fed. Reg. 24,974, 24,976 (July 9, 1986), for EPA's BCT methodology.
BAT	=	"Best Available Technology Economically Achievable," a "best of the best" standard for toxic and non-conventional pollutants.
NSPS	=	"New Source Performance Standards," a standard at least as stringent as BAT, applicable to new sources, as defined in 40 CFR 122.2.
PSES	=	"Pretreatment Standards for Existing Sources," industry-by-industry pretreatment standards, existing sources.
PSNS	=	"Pretreatment Standards for New Sources," industry-by-industry pretreatment standards, new sources.

Figure B-3
A Guide to Technology-Based Limitations For Regulated Discharges

Discharger	Type of Discharge	Direct Receiver	Required Standard
existing sources	conventional pollutants	surface waters	BPT or BCT
existing sources	toxic and nonconventional pollutants	surface waters	BAT
new sources	all pollutants	surface waters	NSPS
existing sources	all pollutants determined to "pass-through" or interfere with POTWs	POTW	PSES
new sources	all pollutants determined to "pass-through" or interfere with POTWs	POTW	PSNS
Regulatory Source: 40 CFR 125.3			

Other NPDES permit conditions will also apply to reflect the general conditions in 40 CFR 122.41. Those general conditions address matters such as:

- ! Monitoring and reporting
- ! The duty to mitigate adverse effects of discharges

- ! The permitting authority's right to conduct on-site inspections
- ! The permittee's duty of compliance (where applicable) with other environmental protection laws

All permittees are also subject to the "bypass" and "upset" provisions of the regulations. "Bypass," or the intentional diversion of waste streams from a treatment facility, is prohibited, except where no feasible alternative exists and it is necessary to preserve life or property. "Upset," or unintentional and temporary noncompliance with technology-based permit effluent limits due to factors beyond the permittee's control, may operate as an affirmative defense to permit violations in appropriate cases, as detailed in the regulations.

With regard to monitoring and reporting, NPDES regulations impose self-monitoring requirements on all permittees. Under the Cluster Rules, some monitoring is required within the spent pulping liquor and bleach plant process areas; see Sections 4.6, 6 and 7 of this manual for further discussion. In addition to monitoring levels of pollutants covered by the effluent limitations, paper and pulp facilities typically are required by permit condition to conduct additional monitoring, such as flow monitoring, outfall observations, and whole effluent toxicity (wet) testing. Other similar permit-specific requirements could include, for example, developing a Dioxin Minimization Program (DMP), or a Program for Effective Residuals Management (PERM).

Monitoring must be carried out using those methods specified in 40 CFR Part 136, or as otherwise required by the permit and must be reported on a standardized Discharge Monitoring Report (DMR) form. A mill must submit DMRs at intervals stated in the permit, but in no case less than once per year. Permittees are subject to a host of other reporting requirements as well, which generally cover any change or anticipated change in the facility or nature or level of pollutant discharge, as more fully outlined in 40 CFR 122.41(l).

Pretreatment Programs

The general NPDES program described above is aimed at controlling the direct discharge of pollutants into the nation's waters. To address the indirect discharge of pollutants through POTWs, CWA section 307(b)(1) directs EPA to develop pretreatment standards for pollutants that interfere with the operation of a POTW, or pass through the POTW in quantities or concentrations that will violate the limitations contained in the POTW's NPDES permit.

To carry out this mandate, EPA has developed pretreatment standards. The standards consist of both general standards applicable to all industrial users of POTWs, and industry-specific categorical standards (covering the pulp and paper industry, among others), expressed as quantities or concentration limits of pollutants dischargeable to a POTW. The categorical pretreatment standards applicable to paper and pulp facilities are contained in 40 CFR Part 430, and are listed by industry subcategory and type of facility

(new or existing). New sources of pollutant discharges subject to pretreatment are addressed by "Pretreatment Standards for New Sources (PSNS)," while discharges from existing sources are addressed by "Pretreatment Standards for Existing Sources (PSES)." Although the categorical standards in Part 430 cover kraft pulp mills, most kraft pulp mills are direct dischargers subject to NPDES permit requirements and not the pretreatment standards.

Pursuant to the pretreatment regulations, most (if not all) POTWs receiving effluent from kraft mills are required to develop pretreatment plans and submit those plans to EPA or the State (if the State has been authorized to administer its pretreatment programs) for approval. If approval is granted, those POTWs are then required to develop local limits to implement EPA's general and categorical standards. The pretreatment requirements become part of the POTW's NPDES permit. Non-approved POTWs are only required to develop local limits if a prohibited pass-through or interference event has occurred. Because local limits will vary, this summary only highlights the national standards developed by EPA.

Approved POTWs may in turn issue "individual control mechanisms" to each industrial user of the POTW. Individual control mechanisms set out all effluent limitations and standards, monitoring and reporting requirements, compliance schedules, and other regulatory requirements. The POTW is the "Control Authority" for purposes of ensuring industrial user compliance with applicable pretreatment standards.

EPA-promulgated general standards that prohibit all pass-through and interference, and impose specific prohibitions against the following discharges of pollutants into POTWs:

- ! Pollutants which create a fire or explosion hazard in the POTW including, but not limited to, wastestreams with a closed cup flashpoint of less than 140 degrees Fahrenheit or 60 degrees Centigrade using the test methods specified in 40 CFR 261.21
- ! Pollutants which will cause corrosive structural damage to the POTW, but in no case discharges with pH lower than 5.0, unless the works is specifically designed to accommodate such discharges
- ! Solid or viscous pollutants in amounts which will cause obstruction to the flow in the POTW resulting in interference
- ! Any pollutant, including oxygen demanding pollutants (BOD, etc.) released in a discharge at a flow rate and/or pollutant concentration which will cause interference with the POTW
- ! Heat in amounts which will inhibit biological activity in the POTW resulting in interference, but in no case heat in such quantities that the temperature at the POTW treatment plant exceeds 40 degrees Centigrade (104 degrees Fahrenheit) unless the Approval Authority, upon request of the POTW, approves alternate temperature limits
- ! Petroleum oil, nonbiodegradable cutting oil, or products of mineral oil origin in amounts that will cause interference or pass through

- ! Pollutants which result in the presence of toxic gases, vapors, or fumes within the POTW in a quantity that may cause acute worker health and safety problems
- ! Any trucked or hauled pollutants, except at discharge points designated by the POTW

The pretreatment regulations prohibit the use of dilution as a substitute for meeting pretreatment requirements. At the same time, however, many industries generate regulated wastewaters which are combined with unregulated wastewaters, or wastewaters subject to a separate categorical standard, and this combination necessarily dilutes the discharge. To address this reality, EPA has developed a "combined waste stream formula," contained in 40 CFR 403.6(e)(1), which must be applied to mixed effluent as a substitute for application of the categorical standards. The formula may be used to establish alternative concentration limits or alternative mass limits, but may not be applied if the alternative limit generated is below the analytical detection limit for the regulated pollutant.

Within 180 days after the effective date of applicable categorical standards, facilities subject to those standards must submit a certified baseline monitoring report to the Control Authority (the POTW, if an approved pretreatment program is in place). Along with general information about the facility and its operations, that report must include the results of flow measurements and sampling and analysis of pollutants, and a compliance schedule where additional pretreatment measures and/or O&M are required. Additionally, facilities subject to pretreatment standards must submit regular compliance reports and notify the Control Authority of any potential problems, changes in discharges, or violations. Facilities must also notify the POTW, EPA, and State hazardous waste authorities in the event that hazardous wastes are discharged to the POTW. Reporting requirements and applicable time deadlines are summarized in Figure B-4. Monitoring records must be kept for at least three years, and must be made available for inspection by regulatory authorities upon request.

With EPA approval, the categorical standards applicable to industrial users of POTWs, discussed above, may be modified by the award of "removal credits" reflecting the pollutant removal levels consistently achieved by the POTW; by way of a "fundamentally different factors variance" which takes into account facility-specific concerns not reflected in the categorical standards; or by application of a "net/gross calculation" which adjusts the standards to account for the presence of pollutants in the industrial user's intake water, but only if the pollutant is listed in 40 CFR Subchapter N. EPA is considering changing this provision to allow industrial users to obtain removal credits for other pollutants upon a showing that there would be no adverse effect on the public health or the environment from the concentration or quantity of the pollutant to be found in sludge if a removal credit is granted.

Figure B-4
Permittee Reporting Requirements

Type of Activity	Reporting Deadline
Planned physical alterations or additions to permitted facility which have potential to significantly increase pollutant discharges or significantly alter sludge use/disposal practices, or which may subject facility to NSPS	As soon as possible
Anticipated noncompliance	In advance of event
Transfer of permit	In advance of event
Compliance/noncompliance schedule reporting (per permit)	Within 14 days after each schedule date
Unanticipated bypass	Within 24 hours of becoming aware of problem
Upset exceeding permit effluent limitation	Within 24 hours of exceedance
Violation of maximum daily discharge limitations for pollutants identified in permit as requiring 24-hour reporting	Within 24 hours of violation
Monitoring reports (DMRs)	As required by permit, but in no case less than once per year, or as provided in 40 CFR Part 503 (for sewage sludge)
Other noncompliance not covered by monitoring reports, compliance schedule reporting, or 24-hour reporting requirements	Along with monitoring reports

Permitting for Storm Water

As the result of 1987 amendments to the CWA, including the enactment of CWA section 402(p), the NPDES program now includes a separate section addressing storm water discharges. As with the NPDES program generally, EPA has authorized many States to issue permits for storm water.

Storm water permit application rules are published at 40 CFR 122.26. Because EPA administers the NPDES permitting program in a few remaining jurisdictions (including some States, U.S. territories, and Indian country), the Agency has published general permits for storm water in the *Federal Register*. For purposes of coverage under the program, "storm water" subject to regulation is defined as "storm water runoff, snow melt runoff, and surface runoff and drainage." Storm water discharge "associated with industrial activity" is defined as "the discharge from any conveyance which is used for collecting and conveying storm water and which is directly related to manufacturing, processing or raw materials storage areas at an industrial plant." To further clarify

industrial coverage, the regulations provide a list of eleven industrial categories subject to storm water permitting requirements. That list defines covered industries by SIC codes and/or narrative descriptions of activity, and includes all of SIC 26--paper and allied products, except paperboard containers and products.

Pulp and paper facilities currently have two options for obtaining storm water permit coverage in locations in which EPA acts as the permitting authority: the individual (facility-specific) permit, or coverage under the "multi-sector general permit (MSGP)," developed for the industry sector as a whole. The MSGP, published at 60 FR 50804 (September 29, 1995) and recently amended at 63 FR 52430 (September 30, 1998), incorporates basic requirements applicable to all industry groups, including monitoring, reporting, and pollution prevention plan requirements. Development of a storm water pollution prevention (SWPP) plan, a central feature of storm water permitting, involves:

- ! Formation of a team of qualified plant personnel who will be responsible for plan preparation and implementation
- ! Assessment and description of potential storm water pollution sources (including drainage maps, inventory of exposed materials, 3 year history of significant spills and leaks, certification of testing for non-storm water discharges, sampling data, and a summary of potential pollution sources)
- ! Selection and implementation of appropriate pollution prevention measures, best management practices (BMPs) and other controls (including good housekeeping, preventive maintenance, spill prevention and response procedures, inspections, employee training, internal recordkeeping/reporting procedures, sediment and erosion control, and runoff management)
- ! Periodic comprehensive site compliance evaluation and subsequent SWPP plan modification

The MSGP establishes special requirements (including general permit eligibility restrictions) for storm water discharges that:

- ! Affect a property that is listed or is eligible for listing on the National Registry of Historic Places
- ! Are subject to CWA New Source Performance Standards (NSPS)
- ! Mix with non-storm water
- ! Contain hazardous substances or oil in excess of reporting requirements established under 40 CFR Parts 117 or 302 during any 24-hours period
- ! Discharge into large and medium municipal separate storm sewer systems
- ! Are subject to Toxic Release Inventory (TRI) reporting requirements in section 313 of the Emergency Planning and Community-Right-To-Know Act (EPCRA)
- ! Store salt

The MSGP requirements that are specific to paper and pulp facilities identify BMPs for the pulp and paper sector, and establish special monitoring and reporting requirements for chemical oxygen demand (COD) for paperboard mills. In addition, because different types of storm water discharges are covered under the structure of the NPDES permitting

program for storm water, MSGP coverage is available for each of the types of covered sectors that are co-located at a facility. Thus, MSGP requirements for landfills/land application sites and steam electric generating facilities are potentially applicable to kraft pulp mills. The MSGP also includes a separate sector for sewage treatment works. Although not directly applicable to industrial wastewater treatment facilities, the BMPs designed for sewage treatment are relevant for wastewater treatment operations at kraft pulp mills. The recommended BMPs established by EPA are discussed in Sections 7 through 9 of this manual, as applicable to each process area.

The MSGP requirements generally provide that all facilities conduct visual examinations of storm water quality at each outfall and, in some cases, by the grab sample method collected within thirty minutes of the first storm water runoff discharge. This visual examination must take place at least once per quarter, and should be conducted in a well-lit area by a member of the pollution prevention team (preferably the same person each time). Reports of this visual examination must be maintained on site with the facility's pollution prevention plan. If samples cannot be collected over the entire course of the quarter due to extreme weather, this fact must be documented. In addition to this basic monitoring, the MSGP establishes additional analytical or chemical monitoring requirements for certain activities in some sectors (such as paperboard mills within the overall paper and allied products sector).

Limits on Oil Discharges

The CWA establishes specific requirements to limit discharges of oil to receiving waters. These requirements may be applicable to certain kraft pulp mills that operate oil-fired boilers. The basic structure of these requirements is as follows:

- ! *Section 110 of the CWA* prohibits discharges of oil that violate applicable water quality standards, cause a film or sheen upon (or a discoloration of) the surface of the water or the adjoining shoreline, or cause a sludge or emulsion to be deposited beneath the surface of the water or on the adjoining shoreline. If a prohibited discharge occurs, then the owner or operator must provide immediate notification to the National Response Center.
- ! *Section 112* requires a Spill Prevention Control and Countermeasure (SPCC) plan for oil-storing/consuming facilities, except where underground storage is $\leq 42,000$ gallons and unburied storage is $\leq 13,20$ gallons (with no single container > 660 gallons). In addition to developing the plan, section 112 imposes reporting requirements, a duty to provide plan updates, and training obligations.
- ! *Sections 116 and 117* designate hazardous substances and reportable quantities (RQs) for those substances. Except for allowable discharges to a POTW or under an NPDES permit, discharges of a designated substance in excess of the applicable RQ must be reported to the federal government in accordance with applicable Department of Transportation regulations.

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APPENDIX C: RCRA Regulatory and Assessment Procedures Overview

Overview

Subtitle C of the Resource Conservation and Recovery Act (RCRA), 42 USC 6901 et seq.,

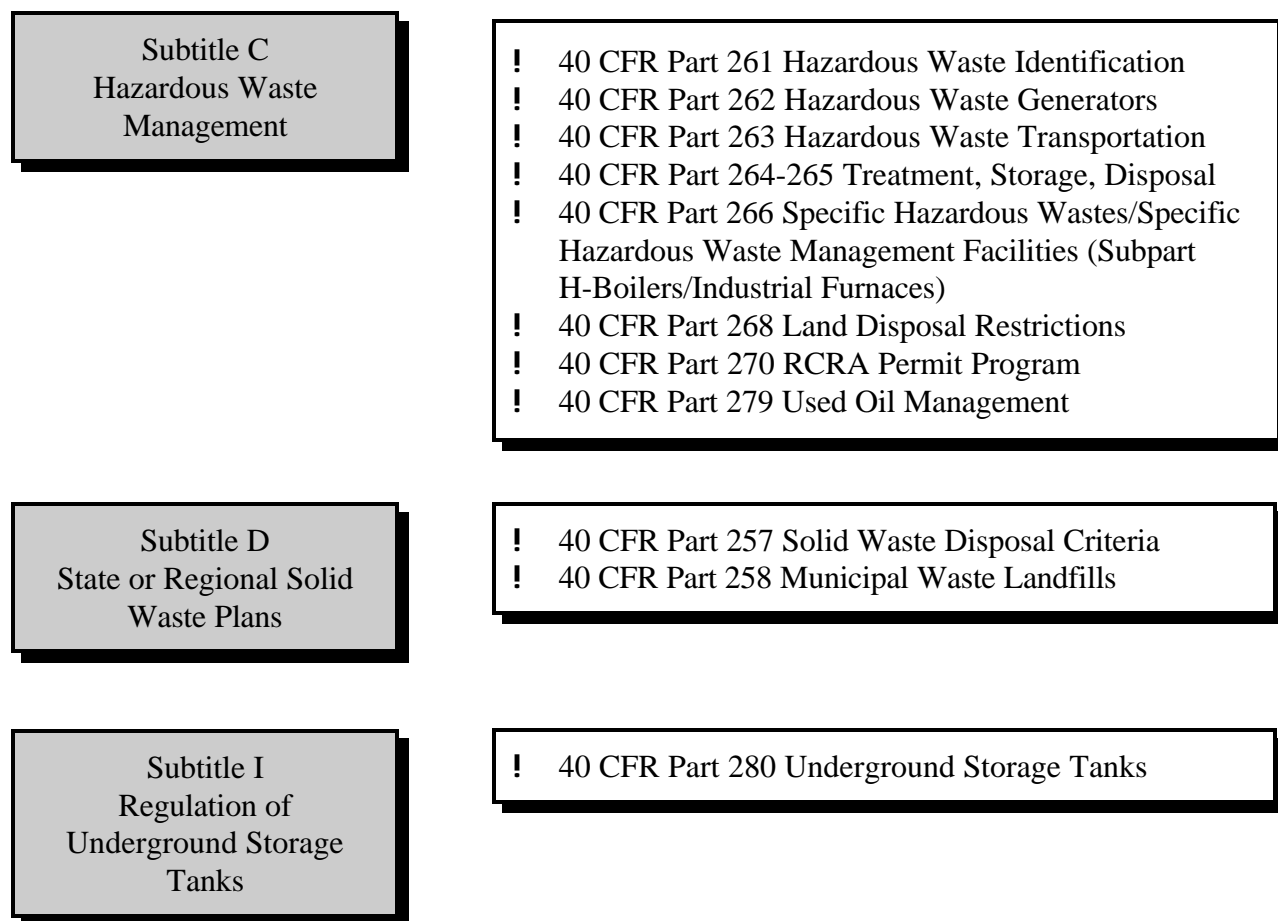
establishes a comprehensive "cradle-to-grave" regulatory program for hazardous waste management. The program is directed by EPA and implemented in part by authorized States. Federal regulations relevant to the hazardous waste program, contained in 40 CFR Parts 260-281, address hazardous waste management by generators, transporters, and the treatment, storage, and disposal facilities (TSDFs) that ultimately receive hazardous wastes. Generators who treat hazardous wastes on site may be subject to both generator and TSDF regulations. Because kraft pulp facilities typically ship all hazardous wastes off site for disposal, however, this overview focuses on generator requirements. Subtitle I of RCRA governs underground storage tanks. Because various processes at a pulp mill may have underground storage tanks covered by this part of RCRA, these requirements are also addressed in this Appendix rather than in a process-specific chapter of the manual. Subtitle D of RCRA establishes requirements for non-hazardous solid wastes. These requirements are not discussed in this Appendix, but are discussed briefly in Section 9 of the manual in the context of on-site solid waste landfills that may be used at a kraft pulp mill. Finally, on-site remediation efforts or other corrective action subject to RCRA are not discussed, although particular mills may be engaged in such activities. Figure C-1 provides a quick guide to the RCRA statutory and regulatory scheme.

In addition to providing a brief general overview of RCRA, this Appendix is designed to assist both agency and plant personnel in conducting RCRA compliance assessments at kraft pulp mill facilities. The primary assessment tools discussed include record reviews, personnel

interviews, and visual inspection of the facility. RCRA requirements and compliance assessment techniques are discussed separately from the process-specific sections of the Manual (Sections 6 through 12), because RCRA issues at kraft pulp mills generally are not highly process-specific. However, as in the main part of the manual, this Appendix does not attempt to cover assessment issues related to topics such as enforcement, inspector responsibilities and authority, and inspector health and safety concerns. Agency inspectors seeking guidance on such issues may wish to consult EPA's RCRA Inspection Manual,¹ or similar resources. The References section at the end of this Appendix lists several resources for obtaining additional information about RCRA issues.

NOTE! This Appendix provides a brief RCRA overview only -- consult the regulations for specific requirements that apply. Also contact the RCRA Hotline -- 1-800-424-9346 -- for further information.

Figure C-1
RCRA Title II Statutory and Regulatory Structure



The Hazardous Waste Determination

Subtitle C of RCRA regulates "solid waste" that is "hazardous." Thus, to be subject to any hazardous waste regulations, one must first determine whether the material at issue is a solid waste within the meaning of applicable statutes and regulations, and if so, whether that waste is hazardous.

Under RCRA, "solid waste" is defined as "any garbage, refuse, sludge . . . and other discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial . . . operations[.]" (42 USC 6903(27)). Clearly, solid waste need not be solid in the ordinary sense of the word to fall within this definition. The regulations provide a more detailed definition of "solid waste" in 40 CFR 261.2, and provide a long list of exclusions in § 261.4. Spent pulping liquor falls within an exclusion (§ 261.4(a)(6)). Another exemption generally applicable for pulp facilities is that industrial wastewater

discharges from NPDES-regulated outfalls are not considered "solid wastes" and are thus not regulated as hazardous wastes (§ 261.4(a)(2)).

The regulations also exclude from coverage certain recyclable materials which are directly reused by excluding them from the definition of "solid waste" (§ 261.2(e)). Excluded recyclable materials include those which are reused without reclamation:

- ! as ingredients in an industrial process,
- ! as substitutes for a commercial product, or
- ! as substitutes for a primary feedstock in the process from which they were generated.

Some materials that must be reclaimed prior to reuse are also excluded, if, for example, they are reclaimed and reused in the process through a closed-loop system (§ 261.4(a)(8)), or, in the cases of reclaimed sludges and by-products, if they are hazardous by characteristic only (§ 261.2(c), Table 1)). The regulations also exclude reclaimed commercial chemical products (§ 261.2(c), Table 1) and wastewater treatment tanks.

If a waste is determined to be a non-excluded solid waste, a determination must then be made as to whether that waste is hazardous. A waste may be deemed hazardous either because it is specifically listed as a hazardous waste by the EPA, or because it exhibits one of four hazardous characteristics, including ignitability, corrosivity, reactivity, or toxicity (42 USC 6921(a), (b)).

Listed Wastes

Forty CFR Part 261, Subpart D identifies several hundred "listed" wastes. The regulations assign each listed waste a hazardous waste number (typically a letter followed by three numbers). The letter preceding the hazardous waste number indicates the category into which the listed waste falls (see Figure C-2). In addition to the waste number, the regulatory waste lists also include a hazard code which identifies the basis for the listing (e.g., "I" for ignitability, "T" for toxicity, etc.). Note that EPA has considered listing kraft pulp mill wastewater treatment plant sludges as a hazardous waste. However, because of the Cluster Rules effluent limitations guidelines and standards, EPA has determined that no such listing is required. See discussion in Section 7.5 of this manual.

Figure C-2
Listed Hazardous Wastes

"F" Wastes	Hazardous wastes from nonspecific sources (§ 261.31(a))
"K" Wastes	Hazardous wastes from specific sources (§ 261.32)
"U" Wastes	Hazardous wastes from discarded commercial chemical products, off-specification species, container residues, and spill residues (§ 261.33(f))
"P" Wastes	Acutely hazardous wastes from discarded commercial chemical products, off-specification species, container residues, and spill residues (§ 261.33(e))

State hazardous waste lists should also be consulted (if applicable) before making a final determination on the question of listing. Once listed, wastes remain listed until delisted by EPA, either on the EPA's initiative or in response to a delisting petition filed by a facility, in which the facility may illustrate that the listed waste is not truly toxic, due (for example) to unique facility processes (see § 260.22).

Characteristic Wastes

If a waste is not on a hazardous waste list, it may nonetheless be subject to regulation as a hazardous waste if it exhibits characteristics of ignitability, corrosivity, reactivity, or toxicity, as determined either by testing or by knowledge. Once deemed hazardous due to the presence of hazardous characteristics, a waste remains hazardous and subject to regulation until such time as those characteristics are no longer present. Each characteristic and its applicable test method(s) are identified and discussed in detail in 40 CFR Part 261, Subpart C. Figure C-3 summarizes the basic definitions, and indicates the relevant waste code numbers that are used to identify characteristic hazardous wastes.

Figure C-3
Characteristic Hazardous Waste

Ignitability (D001)	<p>! Liquid: Not an aqueous solution containing <24% alcohol (by vol.) <u>and</u> has a flashpoint below 140°F, determined by tests in ASTM Standards D-93-79, D-93- 80 or D-3278-78 (§ 261.21(a)(1))</p> <p>! Non-liquids: Capable of causing vigorous and persistent fire hazard through friction, absorption of moisture, or spontaneous chemical change (at std. temp. and pressure) (§ 261.21(a)(2))</p> <p>! Other: Ignitable compressed gas or oxidizer (as defined in 49 CFR 173.300 or 173.151, respectively) (§ 261.21(a)(3) and (4))</p>
Corrosivity (D002)	Liquids with a pH equal to or below 2 or equal to or above 12.5, or which corrode steel at a specified rate; uses tests in EPA Publication SW-846 (§ 261.22(a)(1) & (2))
Reactivity (D003)	Among other things, reacts violently with water or other substances to create toxic gases (§ 261.23(a))
Toxicity (D004-D043)	A waste that leaches specified amounts of metal, pesticides, or organic chemicals using the Toxicity Characteristic Leaching Procedure (TCLP) in EPA Publication SW-846 (§ 261.24(a)); or, for liquids, a waste that contains greater than the designated constituent concentration levels

Special Rules for Certain Waste Types

The EPA has developed several rules to address combinations of hazardous and non-hazardous solid wastes. The "**mixture rule**" provides that mixtures of listed hazardous and non-hazardous solid wastes are regulated as "listed wastes," unless expressly exempted by the regulations, and that mixtures of characteristic hazardous and non-hazardous solid wastes are likewise subject to regulation, unless the mixture no longer exhibits hazardous characteristics (§§ 261.3(a)(2)(iii)-(iv)). Similarly, the "**derived-from rule**" provides that any solid waste generated by the treatment, storage, or disposal of a hazardous waste is considered a hazardous waste as long as it exhibits hazardous characteristics. There is an exception for "derived-from" wastes that are reclaimed and reused, but the exemption excludes reclaimed materials which are burned for energy recovery or used in a manner constituting disposal (§ 261.3(c)(2)(i)).

To address combinations of hazardous wastes and things other than solid wastes, such as soil or groundwater contamination resulting from spills, EPA applies the "**contained in rule**," which provides that a hazardous waste combined with an environmental medium must be managed as a hazardous waste. Unlike the mixture rule, the media contaminated by the hazardous waste can lose its status as hazardous waste once it no longer contains the hazardous waste. The "contained in rule" was first articulated by EPA in the Federal Register (53 FR 31138 (Aug. 17, 1988)), and has been upheld against industry challenge by the courts (*see, e.g., Chemical Waste Management, Inc. v. EPA*, 869 F.2d 1526, 1539 (D.C. Cir. 1989)).

Recycled materials not qualifying for an exclusion from regulation which would otherwise be considered hazardous wastes may nonetheless be subject to exemptions from some or all of the regulatory requirements, as detailed in 40 CFR 261.6. That section lists certain recycled materials that are exempt from all hazardous waste regulation. Other recycled materials listed in § 261.6 qualify for a partial exclusion from regulation and are typically subject only to the special recycling standards set forth in 40 CFR Part 266, and to any applicable provisions of Part 124 and 270.

Finally, **residues in empty containers** have a qualified exemption from regulation as hazardous waste (§ 261.7(b)). Empty containers, as well as the inner liners from empty containers, are not regulated as hazardous wastes, provided that:

- ! All wastes have been removed using commonly employed practices, **AND**
- ! No more than 2.5 centimeters (one inch) of residue remains on the container bottom or liner, **OR**
- ! No more than 3 percent by weight of the total capacity of the container remains in the container or inner liner, if the container is less than or equal to 110 gallons in size, **OR**
- ! No more than 0.3 percent by weight remains in the container, if the container is greater than 110 gallons in size.

Containers that held compressed gas are considered empty and thus exempted from regulation when the pressure in the container approaches atmospheric pressure. A container or inner liner that held an acute hazardous waste is empty and thus exempted from regulation if it has been triple rinsed using solvent, or cleaned by an equivalent method, or if the inner liner which prevented contact with commercial chemical products has been removed.

Assessment Considerations for Waste Determinations:

- ▶ Prior to an assessment, the inspector must be familiar with the processes occurring at the facility.
- ▶ The generator must determine if a waste is hazardous and the inspector must substantiate the determination. Knowledge of definitions and exceptions for hazardous waste is essential for both.
- ▶ When making a hazardous waste determination under §261.3, remember that listing takes precedence over characteristics.
- ▶ The inspector should confirm that listed wastes are managed as hazardous waste, and verify that generators have tested or apply their knowledge to wastes that are suspected of exhibiting hazardous characteristics.
- ▶ The inspector should request documentation for wastes claimed to be exempt as "recycled" or "reclaimed" wastes, and determine whether regulatory criteria applicable to these exemptions have been met.
- ▶ With regard to the empty container exemption, has the waste been removed by commonly employed practices (spilling, pouring, pumping, etc.)? If so, is there no more than 1 inch of residue remaining?
- ▶ If the residues in an empty container are subsequently exhumed and managed, § 261.7 exempts the resulting material from hazardous waste regulation, including the requirement to determine if the solid waste exhibits a hazardous characteristic under Part 261, Subpart C.

Obligations of Generators

Those who generate hazardous waste, as defined above, are subject to a variety of notification, accumulation and storage, labeling, tracking (by use of manifests), and hazardous waste minimization requirements under 40 CFR Part 262. Generators who provide on-site treatment, storage, and disposal are also subject to the TSDF permitting or interim requirements of Parts 265 and 270. However, most paper and pulp facilities ship their hazardous waste to an off-site TSDF and thus avoid the complex requirements of the permitting and interim status regulations.

For purposes of regulation, EPA has identified three categories of generators, defined according to the amount of hazardous waste generated or accumulated. Those categories include large quantity generators (LQGs), small quantity generators (SQGs), and conditionally exempt small quantity generators (CESQGs). Figure C-4 summarizes the considerations used for this categorization. Because generator categories are based upon quantities generated per month and total accumulation, a facility could conceivably change categories over time (so-called "episodic generation"). Note that in determining the status of a generator based on the quantity of hazardous waste generated, certain hazardous wastes are excluded from the calculation (see § 261.5(c)). Generally, only those hazardous wastes subject to substantive RCRA regulation under 40 CFR Parts 262 through 268 are counted.

**Figure C-4
Hazardous Waste Generators**

<p align="center">Large Quantity Generators</p>	<p>In one calendar month:</p> <ul style="list-style-type: none"> ! generate 2,200 pounds (1,000 kg) or more of hazardous waste, or ! generate 2,200 pounds (1,000 kg) or more of spill cleanup debris containing hazardous waste, or ! generate more than 2.2 pounds (1 kg) of acutely hazardous waste, or ! generate more than 220 pounds (100 kg) of spill cleanup debris containing an acutely hazardous waste, or <p>At any time:</p> <ul style="list-style-type: none"> ! accumulate more than 2.2 pounds (1 kg) of acutely hazardous wastes on-site, or ! accumulate more than 13,230 pounds (6,000 kg) of hazardous waste on-site
<p align="center">Small Quantity Generators</p>	<p>In one calendar month:</p> <ul style="list-style-type: none"> ! generate more than 220 pounds (100 kg) but less than 2,200 pounds (1,000 kg) of hazardous waste, or ! generate more than 220 pounds (100 kg) but less than 2,200 pounds (1,000 kg) of spill cleanup debris containing hazardous waste, or <p>At any time:</p> <ul style="list-style-type: none"> ! accumulate more than 2.2 pounds (1 kg) of acutely hazardous waste on-site
<p align="center">Conditionally Exempt Small Quantity Generators</p>	<p>In one calendar month:</p> <ul style="list-style-type: none"> ! generate 220 pounds (100 kg) or less of hazardous waste, or ! generate 220 pounds (100 kg) or less of spill cleanup debris containing hazardous waste, or ! generate 2.2 pounds (1kg) or less of acutely hazardous waste, or <p>At any time:</p> <ul style="list-style-type: none"> ! accumulate up to 2.2 pounds (1 kg) of hazardous wastes on-site

Assessment Considerations for Generator Status:

- ▶ Confirm that generators that claim to be SQGs are not generating more than the limit for SQGs (Note that 100-1,000 kg/mo is between 220 and 2,200 lb/mo or about 25 - 300 gallons). This may be done by reviewing manifests for quantities and doing a mass balance to convert to probable weight for waste on-site.
- ▶ Calculate the maximum quantity of hazardous waste in tanks based upon storage volumes of tanks. This may be determined based upon the quality of waste characteristics, the density of the waste and the volume available for waste storage. The waste must not exceed 6,000 kg, unless the facility has interim status, a permit or an emergency extension. If the maximum volume of tanks will exceed 6,000 kg, but the actual waste quantity is less, this is not a current violation, but the assessment should note the potential for a status change based on tank capacity.

Notification

Upon determining that a waste is a hazardous waste, a generator must notify EPA before transporting, treating, storing, or disposing of that waste. Notifications are made using EPA Form 8700-12 (45 FR 12746 (1988)). The notification form elicits the generator's name and address, identifies a facility contact person, provides the EPA hazardous waste number for the waste being managed (as indicated in the hazardous waste regulations), and provides a brief description of the type of regulated activity being conducted at the facility. Upon receiving this notification, EPA issues a generator ID number which is used to track all wastes generated by the facility (40 CFR 262.12).

CESQGs are exempt from the notification and ID number requirements (§ 261.5(b)), as are those who generate certain recycled materials specified in § 261.6(a)(3). All other generators must provide notification and obtain an ID number before offering a waste for transport, or otherwise disposing of that waste.

Accumulation and Storage

As a general rule, generators who store hazardous waste on site must obtain a RCRA permit or interim status under 40 CFR Parts 265 and/or 270, in addition to meeting all generator requirements of 40 CFR Part 262. Recognizing that facilities cannot dispose of waste the moment it is generated, however, EPA allows generators to store hazardous wastes at the facility for up to 90 days (for LQGs) or 180 days (for SQGs accumulating no more than 6000 kg) without being subject to permitting or interim status requirements if the facility complies with the accumulation regulations of 40 CFR 262.34. The accumulation period applicable to SQGs may be extended to 270 days, if the SQG must transport the waste over a distance of 200 miles or more for treatment (§ 262.34(e)). CESQGs are exempt from Part 262, so long as waste quantity limitations of the regulations are met (§ 261.5(b),(e),(f),(g), and (j)).

The accumulation regulations mandate that all hazardous wastes must be stored in containment buildings, containers, or tanks, or on drip pads, which comply with the standards of 40 CFR Part 265 (40 CFR section 262.34(a)(1)), and must be managed in accordance with any applicable air emission standards (see 40 CFR Part 265, Subparts AA, BB and CC). Key requirements from Part 265 are detailed in Figure C-5.

Figure C-5
Storage Requirements for Temporary Accumulation
(40 CFR 262.34)

CONTAINERS: PART 265 SUBPART I
<p>Generators must:</p> <ul style="list-style-type: none"> ! Note the date that accumulation began and be clearly labeled with the words "Hazardous Waste" ! Construct containers of appropriate material and maintain them in good condition ! Keep containers closed at all times except when wastes are being removed or added ! Inspect containers weekly ! Take additional precautions to reduce the chance of explosion or fire if incompatible wastes are stored ! Note that air emission standards under Part 265, Subpart CC may apply
TANKS: PART 265, SUBPART J (Note: These requirements do not apply to wastewater treatment tanks.)
<p>Generators must:</p> <ul style="list-style-type: none"> ! Assess existing tank system's integrity ! Design and install new tank systems or components according to regulatory specifications ! Provide secondary containment for tanks of a certain age, or for those storing specified hazardous wastes ! Comply with regulatory operating requirements, including spill, overfill, and overtopping prevention controls and practices ! Inspect the tank, spill control equipment, and monitoring data daily ! Inspect any cathodic protection systems at least bimonthly ! Immediately remove any leaking or unfit tanks from operation, take appropriate containment action, and provide notice/reporting of any release to the environment ! Refrain from storing ignitable, reactive, or incompatible wastes in tanks, unless regulatory treatment or other special requirements are met ! Comply with closure and post-closure requirements ! Apply modified requirements for tank storage, reflected in 40 CFR 265.201 (for SQGs) ! Note that air emission standards under Part 265, Subpart CC may apply <p>Note:</p> <ul style="list-style-type: none"> ! These requirements do not apply to wastewater treatment tanks

Figure C-5 (cont.)
Storage Requirements for Temporary Accumulation
(40 CFR 262.34)

DRIP PADS: PART 265, SUBPART W
<p>Generators must:</p> <ul style="list-style-type: none"> ! Assess existing drip pad integrity ! Design, install, and operate new drip pads according to regulatory specifications ! Inspect liners and cover systems during construction or installation ! Have liners inspected and certified by independent qualified, registered professional engineer immediately after construction or installation ! Inspect drip pads weekly during operation, and after any storms ! Comply with closure requirements of regulations ! Maintain specific waste removal records
CONTAINMENT BUILDINGS: PART 265, SUBPART DD
<p>Generators must:</p> <ul style="list-style-type: none"> ! Design building and operate according to regulatory standards ! Establish procedures and regularly document the fact that the unit is emptied within the accumulation time frame ! Avoid the land disposal restrictions of Part 268 by ensuring that the unit: <ul style="list-style-type: none"> ! Is completely enclosed ! Is constructed out of use-appropriate materials ! Has a durable primary barrier ! Has a primary barrier that will prevent migration, a liquid collection system to protect the primary barrier, and a secondary containment system (if unit used to manage liquids) ! Has controls to prevent fugitive dust emissions, if applicable ! Is designed and operated to ensure containment (design and operating standards are provided in the regulations) (40 CFR 262.34 (a)(1)(iv)) ! Comply with closure and post-closure standards

Generators may accumulate as much as 55 gallons of hazardous waste or one quart of acutely hazardous waste listed in § 261.33(e) in containers at or near the generation point without triggering the 90-day (180-day for SQGs) accumulation regulations. This is referred to as "satellite accumulation." The minimal requirements of § 262.34(c) must be met for satellite accumulation, including proper marking of containers and compliance with specified container management practices. Once these limits are exceeded, however, the generator has only three days to comply with the 90-day (180-day for SQGs) rules (§ 262.34(c)(2)).

Assessment Considerations for Accumulation/Storage Practices:

- ▶ Inspect accumulation area to assure that all containers are marked with the accumulation start date and the words "Hazardous Waste."
- ▶ Because tanks are reused, the generator is not required to mark the tank with the accumulation start date. Therefore, review records and manifests to verify that tanks have been emptied within 90 days.
- ▶ Observe satellite accumulation areas (facilities may have multiple) and insure that there is no waste in excess of 55 gallons, or in excess of one quart for acutely hazardous waste. If satellite containers are full, check "full" date to assure containers are removed from satellite area w/i 3 day limit.
- ▶ Verify that satellite accumulation areas are at or near the point of waste generation and under the control of a close-by operator.
- ▶ Verify that satellite accumulation containers are closed except when waste is being added or removed.

Pretransportation Requirements: Packaging and Marking the Waste

With the exception of CESQGs, all generators are subject to the pretransportation requirements of §§ 262.30-262.33. Those regulations adopt by reference the Department of Transportation (DOT) regulations governing packaging, labeling, and marking of hazardous waste, and the placarding of the vehicle used to transport that waste. Figure C-6 summarizes pretransportation requirements and identifies applicable EPA and DOT regulations.

Figure C-6
Correlation with Applicable DOT Regulations

DOT Cite	EPA Cite	Requirements
49 CFR 173, 178, 179	40 CFR 262.30	Packaging must meet specific standards outlined in 49 CFR 173 (requirements for shipping and packaging), 178 (shipping container specifications), and 179 (specifications for tank cars).
49 CFR 172	40 CFR 262.31-262.32	Containers must be marked and clearly labeled according to 49 CFR 172 (see Hazardous Waste Tables), with the statement: "Hazardous Waste -- Federal Law prohibits improper disposal. If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency."
49 CFR 172, Subpart F	40 CFR 262.33	Placecards must be provided in accordance with DOT regulations for hazardous materials.

The DOT provides technical assistance in complying with these pretransportation requirements through its Hazardous Materials Information Center, (202) 366-4488.

Assessment Considerations for Packaging/Marking:

- ▶ If hazardous waste is ready for shipment, the inspector should:
 - Check that containers are in good condition, and not damaged, corroded or leaking.
 - Check each container for the appropriate DOT label, manifest number and generator's name and address.
- ▶ If there is no waste ready for shipment, compliance with these requirements must be deduced by questioning appropriate facility personnel. The inspector should request to see placards, if they are required, and printed hazardous waste labels. If the facility has these items on hand, they are likely being used.

Pretransportation Requirements: The LDR Determination

Prior to shipment, generators must determine whether the hazardous waste is prohibited from land disposal. The regulations prohibit land disposal of virtually all hazardous wastes, except where the treatment standards of 40 CFR Part 268 have been met. Land disposal includes any placement of hazardous waste into a landfill, land treatment unit, waste pile, injection well, salt dome or salt bed formation, underground mine or cave, surface impoundment or placement in a concrete vault or bunker intended for disposal purposes (§ 268.2(c)). Although the ultimate responsibility for treatment lies with the person disposing the waste, generators must notify the designated TSDF of any necessary treatment requirements under the LDRs in order to ensure that proper treatment occurs.

As a first step to meeting generator LDR obligations, the generator must determine, by knowledge or testing, whether the hazardous waste meets the treatment standards of §§ 268.40, 268.45 or 268.49 (§ 268.7(a)(1)). After this determination is made, the generator is subject to a multitude of notice, certification, and recordkeeping requirements. The regulations, as recently amended to reduce paperwork (see 62 FR 25998, May 12, 1997, effective August 11, 1997), require notice of LDR status to each TSDF receiving hazardous waste only with the initial shipment, unless the waste or the generating facility change, in which case another notice reflecting the change must be provided. The notice must include all of the relevant information reflected in the "Generator Paperwork Requirements Table" of § 268.7 (reproduced below as Figure C-7).

Figure C-7
Generator Paperwork Requirements Table

Required Information	If waste does not meet treatment standard (40 CFR 268.7 (a)(2))	If waste meets treatment standard at point of origination (40 CFR 268.7 (a)(3))	If exemptions to LDR treatment standards apply (40 CFR 268.7 (a)(4))	If managing a lab pack and using alternative treatment standards of §268.42 (c) (40 CFR 268.7 (a)(9))
1. EPA Hazardous Waste and Manifest numbers	✓	✓	✓	✓
2. Statement: this waste is not prohibited from land disposal			✓	
3. The waste is subject to the LDRs. Identify the constituents of concern for F001-F005, and F039, and underlying hazardous constituents (for wastes that are not managed in a Clean Water Act (CWA) or CWA-equivalent facility), unless the waste will be treated and monitored for all constituents. If all constituents will be treated and monitored, there is no need to put them all on the LDR notice	✓	✓		
4. The notice must include the applicable wastewater/nonwastewater category (see §§ 268.2(d) and (f)) and subdivisions made within a waste code based on waste-specific criteria (such as D003 reactive cyanide)	✓	✓		
5. Waste analysis data (when available) .	✓	✓	✓	
6. Date the waste is subject to the prohibition			✓	
7. For hazardous debris, when treating with the alternative treatment technologies provided by § 268.45: the contaminants subject to treatment, as described in § 268.45(b); and an indication that these contaminants are being treated to comply with § 268.45			✓	
8. A certification is needed (see applicable section for exact wording)		✓		✓

As reflected in § 268.9(a)-(c), the generator must identify each applicable waste code before determining what (if any) treatment is required. Where wastes are both listed and characteristic, the treatment standard for the listed waste controls, provided that the treatment standard addresses the hazardous constituents that cause the waste to exhibit a hazardous characteristic. Otherwise, all applicable treatment standards must be met. The treatment standards for all waste types are specified in Subpart D of Part 268. These standards are expressed either as a specific concentration level (in mg/l³) or as application of a specific technology. Where characteristic waste is no longer hazardous, a one-time notification and certification are placed in the generator's file and copies sent to the EPA Regional Office or authorized State (§ 268.9(d)).

In addition to the preceding requirements, Part 268 contains surface impoundment exemptions to the LDRs (Subpart B), and waste-specific prohibitions on land disposal that are not generally applicable to kraft pulp mills. Note also that § 268.3(b) allows in certain circumstances for dilution of characteristic wastes in a wastewater treatment unit that discharges under a NPDES permit (or, to a POTW if subject to pretreatment standards), or to a CWA-equivalent system. The wastes must be hazardous only because they exhibit a hazardous waste characteristic. Finally, the regulations exempt the following wastes from LDR requirements:

- ! Wastes generated by CESQGs,
- ! Wastes identified or listed as hazardous after November 8, 1984, for which no land disposal prohibitions or treatment standards have been promulgated, and
- ! De minimis losses of characteristic wastes to waste waters (defined as losses from normal material handling operations, minor leaks, etc.).

Assessment Considerations for LDR Requirements:

- ▶ Determine whether the generator produces wastes subject to the LDRs.
- ▶ Review how the generator determines the waste is restricted by reviewing documentation/data used to support that determination.
- ▶ Check that LDR notifications are retained and have a corresponding manifest, and determine whether all notification/certification requirements of § 268.7 were met.
- ▶ If a generator is treating a restricted waste in accumulation tanks or containers, review the waste analysis plan.

Tracking and the Manifest System

The manifest system used to track hazardous waste from generation to final disposal is a central feature of the RCRA regulatory scheme. Pursuant to 40 CFR Part 262, Subpart B, generators of hazardous waste must prepare a Uniform Hazardous Waste Manifest (EPA Form 8700-22, reprinted in the Appendix to Part 262), or the equivalent form developed by the consignment or generating State, for each hazardous waste

shipment. The manifest must identify the permitted TSDf designated to receive the waste, and may identify an alternate TSDf in the event that an emergency prevents delivery to the TSDf of choice.

At the time of hazardous waste transportation to an off-site TSDf, the generator signs and dates the manifest, and obtains the signature of the initial transporter. The manifest consists of sufficient carbon copies so that the generator, each transporter, and the TSDf may each retain one copy, with one additional copy being returned to the generator by the TSDf (§§ 262.22, 262.23). Generators must retain a copy of the manifest for at least three years (§ 262.40(a)).

LQGs who do not receive a signed copy of the manifest from the TSDf within 35 days of shipment must contact the TSDf and/or transporter to determine the status of the hazardous waste. If no manifest is received within 45 days of shipment, notwithstanding the LQG's efforts to locate the manifest, the LQG must file an "Exception Report" with EPA, which consists of a copy of the manifest and a cover letter explaining efforts taken to locate the manifest. SQGs are subject to similar requirements, except that they need not attempt to locate the manifest, and are only required to submit an Exception Report after 60 days have passed (§ 262.42(a), (b)).

The manifest requirements as outlined above apply to all LQGs, and to all SQG's, unless the SQG reclaims waste under a contractual agreement meeting the requirements of 40 CFR section 262.20(e)(1) and maintains a copy of the reclamation agreement on file for three years after termination or expiration of the agreement (§ 262.20(e)(2)). CESQGs are exempt from manifest requirements (§ 261.5(b)).

Assessment Considerations for Manifests:

- ▶ Has the facility used the correct manifest (consignment State, generator State, or other)?
- ▶ Review generator's manifest files to determine whether manifests were completed correctly.
 - Are the original manifests signed and dated by the generator and first transporter?
 - Is the EPA ID number clearly marked for the generator, transporter and TSDf?
 - Have all spaces been completed correctly, and all changes/cross-outs initialed?
 - If the State requires hazardous waste codes to be included on the manifest, has the correct waste code been entered?
- ▶ The TSDf should return the signed copy of a manifest to an LQG within 35 days, and to an SQG within 60 days, from the date upon which the waste was accepted by the initial transporter. A copy of the returned and signed manifest must be retained for three years (the original may be discarded once the signed manifest is returned).
- ▶ Obtain explanations for unusual gaps in the frequency of off-site shipment. Are subsequent shipments larger? This could indicate an exceedance of the 90-day accumulation limit.

Recordkeeping and Reporting

Generators are required to prepare and retain copies of the following records for at least three years: (1) manifests, (2) Exception Reports, (3) Biennial Reports detailing shipments to TSDFs, and (4) laboratory test data generated by the initial hazardous waste determination (if testing, rather than knowledge, was used) (40 CFR Part 262, Subpart D). The three-year retention period is automatically extended where unresolved EPA enforcement actions are pending, or as otherwise requested by EPA (§ 262.40(d)).

Exception Reports are discussed in the preceding section. Biennial Reports (EPA Form 8700-13A) must be prepared by generators who ship hazardous waste to an off-site TSDF within the United States, and filed with the EPA Regional Administrator by March 1 of each calendar year. Biennial Reports include the following information:

- ! EPA ID number, name, and address of generator
- ! Calendar year covered by report
- ! EPA ID number, name and address for each TSDF to which waste was shipped
- ! EPA ID number and name of any transporter used during the year
- ! Description, EPA hazardous waste number, DOT hazard class, and quantity of each hazardous waste shipped to a TSDF
- ! Description of waste minimization efforts
- ! Description of changes in volume and toxicity actually achieved, as compared to previous years
- ! Certification

SQGs are subject to slightly less stringent recordkeeping and reporting requirements, inasmuch as the regulations exempt them from the Biennial and Exception Report retention requirements of § 262.40(b), and impose simplified Exception Report reporting requirements under § 262.42(b). However, both LQGs and SQGs may be required to furnish additional reports concerning hazardous waste quantity and disposition at the Administrator's discretion, as authorized by § 262.43. CESQGs are entirely exempt from recordkeeping and reporting requirements (§ 261.5(b)).

Assessment Considerations for Recordkeeping/Reporting:

- ▶ Are all required reports and records being retained? If additional reports were required by the Regional Administrator, verify that they are present.
- ▶ If the State has a shorter time frame for the manifest to be returned to the generator, verify that the facility has been receiving the signed manifests within that timeframe.
- ▶ The inspector should review the on-site copy of the Biennial Report for completeness.

Waste Minimization Requirements

Generators are required to develop programs to minimize the quantity and toxicity of their hazardous wastes (typically by source reduction or recycling), to report minimization efforts on their Biennial Reports, and to certify on each manifest that they are engaged in such efforts. EPA's interim final guidance on waste minimization, 58 FR 31114 (May 28, 1993), provides that a waste minimization plan should incorporate: (1) top management support, (2) characterization of waste minimization and management costs, (3) periodic waste minimization assessments, (4) appropriate cost allocation, (5) encouragement of technology transfer, and (6) program implementation and evaluation. Additional guidance and specific examples of successful waste minimization programs may be found in The EPA Manual for Waste Minimization Opportunity Assessments (1988 ed.) (EPA/600-2-88-025). Five basic types of waste minimization are:

- ! **Source Separation (or segregation)** - Keep hazardous waste streams separated from nonhazardous waste streams through management practices to prevent contamination of the nonhazardous waste. This is an inexpensive and effective method for reducing the volume of hazardous waste to be handled, transported and eventually disposed of.
- ! **Recycling (also referred to as recover and reuse)** - The process of removing a substance from a waste returning it to productive use. Solvents, acids, and metals are commonly recycled. Assure that the recycling is not "sham recycling."
- ! **Raw Material Substitution** - Replacing a raw material that generates large amounts of hazardous waste with a material that generates less hazardous waste.
- ! **Manufacturing Process Changes** - Eliminate or alter a process so that it reduces or eliminates the amount of hazardous waste produced.
- ! **Product Substitution** - Eliminating a product that contributes to contamination and replacing it with a product that is innocuous.

Exporters of Hazardous Waste

Generators who export their hazardous wastes to foreign countries rather than sending them to a domestic TSDF are subject to the requirements of 42 USC 6938 and 40 CFR Part 262, Subpart E. The regulations require exporters to provide EPA with notice at each step of the export process and to comply with special manifesting, exception, and annual reporting requirements. Under Subpart E, exports of hazardous waste are prohibited, unless or until:

- ! Notice is given to EPA containing all of the information about the waste and its expected course of travel listed in 40 CFR 262.53,
- ! The receiving country consents to the shipment,

- ! a copy of the EPA Acknowledgment of Consent (i.e., receiving country consent as cabled by the U.S. Embassy in the receiving country) accompanies the shipment, and
- ! the shipment conforms to the receiving country's consent.

Copies of all essential documents must be retained for at least three years, and the retention period is automatically extended during any period of unresolved enforcement actions or as requested (40 CFR 262.57).

Special export requirements may apply if the hazardous waste is being shipped to a member country of the Organization for Economic Cooperation and Development (OECD), as defined in 40 CFR 262.58(a)(1).

Assessment Considerations for Waste Exports:

- ▶ Review the exporter file. Verify that all information is complete and correct, the point of departure from the US and the additional certification statement are areas commonly overlooked.
- ▶ Verify that the transporter has returned a signed copy of the manifest with the date and place of departure within 45 days. If not, has an Exception Report been filed?
- ▶ If the exporter is using a broker, the inspector should question the nature of the arrangements made to verify that all export requirements are being met.
- ▶ Insure that a copy of each notification of intent to export, EPA Acknowledgment of Consent, confirmation of delivery, and annual report have been retained for at least 3 years.

Personnel Training and Contingency Planning

Large quantity generators are subject to the same requirements for personnel training, preparedness and prevention, and contingency plan/emergency procedures as TSDFs (see § 265.16, and Subparts C and D of Part 265). **Training requirements** include classroom or on-the-job instruction, annual review of training received, and records of all training provided. **Preparedness and prevention requirements** relate to general facility operation and maintenance (O&M) practices, required equipment, access to alarms, required aisle space to allow for responding to emergencies, and arrangements with local and State emergency response agencies (police, fire, hospitals, emergency response teams) to familiarize them with site conditions and/or types of wastes generated/handled on site. **Contingency plan requirements** address the measures to be taken in response to any unplanned sudden or non-sudden release of hazardous waste or hazardous waste constituents. The regulations impose several specific components of an acceptable plan.

For small quantity generators, the same preparedness and prevention procedures in Part 265, Subpart C apply, but the personnel training and contingency plan requirements in Part 265 do not apply. Instead, § 262.34(d)(5) requires that the facility:

- ! Have at least one employee on-site or on-call that serves as an emergency coordinator
- ! Properly notify the National Response Center (800-424-8802) immediately in the event of a release that could threaten human health outside the facility or that has reached surface waters
- ! Ensure that all employees are thoroughly familiar with proper waste handling procedures relevant to their responsibility during both normal operations and emergencies.
- ! Post next to the telephone the emergency coordinator's name and telephone number, the location of fire extinguishers, spill control material, and fire alarm, and the telephone number of the fire department (unless there is a direct alarm).

Standards for the Management of Used Oil

Used oil is one of a growing number of wastes classified as nonhazardous that have been singled out for special regulation outside of the general nonhazardous waste program of RCRA Subtitle D. Pursuant to the Used Oil Recycling Act of 1980, EPA adopted regulations for used oil (40 CFR Part 279) which establish standards for generators, transporters, and processors. Many States have established their own regulations for handling used oil. Inspectors should become familiar with a State's used oil requirements prior to inspection.

For purposes of federal regulation, used oil means any oil that has been refined from crude oil, or any synthetic oil, that has been used and as a result of such use is physically or chemically contaminated (§ 279.1). The EPA presumes that used oil is recycled, unless a used oil handler disposes of it, or sends it for disposal. Except as provided in § 279.11, the regulations in Part 279 apply to used oil whether or not it exhibits any characteristic of hazardous waste identified in Subpart C of 40 CFR Part 261. Used oil that exceeds any specification level is subject to Subpart C as an "off-specification used oil." Mixtures of used oil and other substances may generate separate or additional regulatory requirements. Figure C-8 lists different used oil mixtures and indicates how they are regulated.

Figure C-8
Used Oil and How it is Regulated

Used Oil	How Regulated
Mixtures of used oil and listed hazardous waste	Regulated as a listed hazardous waste under Subpart D of Part 261
Used oil containing more than 1,000 ppm total halogens	Regulated as hazardous waste under Subpart D of Part 261 (although may be rebutted)
Mixtures of used oil and hazardous waste that exhibit a characteristic other than ignitability	Regulated as hazardous waste under Parts 260 through 266, 268, 270, and 124
Mixtures of used oil and characteristic hazardous waste if the mixture does not exhibit any hazardous waste characteristic	Regulated as used oil under Part 279
Mixtures of used oils and characteristically ignitable hazardous waste that is not listed in Subpart D of Part 261	Regulated as used oil under Part 279, if resultant mixture does not exhibit the characteristic of ignitability
Mixtures of used oil and CESQG hazardous waste	Regulated as used oil under Part 279
Mixtures of used oil with products	Regulated as used oil under Part 279. Unless the mixture is used oil and diesel fuel for use in generator's vehicle. (Prior to mixture, used oil is subject to Subpart C of Part 279)

Standards for Generators of Used Oil

A used oil generator is any person, by site, whose act or process produces used oil, or whose act first causes used oil to become subject to regulation, except as provided in § 279.20(a)(1)-(4). The regulations address three generator activities: (1) used oil storage, (2) on-site burning in space heaters, and (3) off-site shipments.

Used oil generators that store used oil in underground storage tanks (USTs) are subject to regulation under 40 CFR Part 280 (see discussion below in this Appendix), and are also subject to all applicable spill prevention, control, and countermeasure requirements of 40 CFR Part 112. Other permissible storage units (tanks, containers, or units subject to regulation under Parts 264 or 265, and any fill-pipes used for oil transfer) must be maintained in good condition and labeled with the words "Used Oil." Upon detection of any release to the environment not covered by the UST regulations, generators must stop and contain the release, clean up and manage the released material, and if necessary, repair or replace any leaking used oil storage containers or tanks prior to returning them to service (§ 279.22).

Generators may burn used oil in on-site space heaters provided that the oil is generated only by the owner/operator, the heater has a maximum capacity of not more than 0.5 million Btu per hour, and the heater combustion gases are vented to the ambient air (§ 279.23).

When shipping used oil off-site, generators must ensure that their transporter has obtained an EPA ID number, except for:

- ! Generators who self-transport less than 55 gallons of their used oil at any time;
- ! Generators who self-transport less than 55 gallons of their used oil from the generator site to an aggregation point; or
- ! Generators who arrange for used oil to be transported pursuant to a tolling agreement under which the reclaimed oil is returned to the generator (§ 279.24).

Assessment Considerations for Used Oils:

- ▶ Determine how used oil is handled (disposed of or recycled).
- ▶ Determine if the used oil has been mixed with a listed waste or characteristically hazardous waste, if it contains more than 1,000 ppm or exhibits the characteristic of ignitability.
- ▶ Review test results and/or analysis of used oils.
- ▶ Assess the condition of the used oil storage unit. It should be labeled "Used Oil", as should fill pipes for USTs.
- ▶ Determine whether any used oil releases have occurred. If so, how were they managed and cleaned-up? (Review associated documentation.)
- ▶ Determine whether used oil is burned in a space heater. If so, do the space heater and the quantities burned meet all the required conditions?

Regulation of Underground Storage Tanks

In 1984, Congress amended RCRA by enacting the Hazardous and Solid Waste Amendments (HSWA). Subtitle I of the HSWA mandated the creation of a program for the regulation of underground storage tanks (USTs) containing regulated substances other than hazardous wastes. The EPA responded to this mandate by promulgating comprehensive UST regulations, codified at 40 CFR Part 280. States may be authorized to operate their own UST programs, so long as State UST regulations are at least as strict as federal requirements.

A UST is defined as a tank that stores "regulated substances" and that has at least 10 percent of its volume below the surface of the ground, including piping connected to the tank (§ 280.12). Regulated substances include hazardous chemical products regulated under CERCLA (above de minimis concentrations) and any petroleum products that are liquid at standard conditions. As noted above, regulated substances do not include hazardous wastes covered by RCRA Subtitle C.

Other USTs excluded from regulation include:

- ! Heating oil tanks on the premises where the tank is located;
- ! Flow-through process tanks;
- ! Any wastewater treatment tank system regulated under the CWA;

- ! Tanks with less than 110 gallons capacity;
- ! Spill and overflow containment systems that are expeditiously emptied after use;
- ! Stormwater and wastewater collection systems; and
- ! Tanks situated on or above the floor of underground areas such as basements, shafts and tunnels.

The UST regulations establish conditions for design, construction, operation, installation, and notification; release detection, response, investigation, confirmation, reporting, and corrective action; out of service UST systems and closures; and financial responsibility. Figure C-9 provides a general overview of the UST requirements in 40 CFR Part 280.

Figure C-9
Underground Storage Tank Requirements (40 CFR Part 280)

Requirements	Description
Design, Construction, Installation, and Notification (Subpart B)	<ul style="list-style-type: none"> ! New USTs (installed after December 1988) must meet performance standards detailed in 40 CFR 280.20 ! All existing UST systems (installed before December 1988) must be upgraded to add spill, overflow, and corrosion protection, and to meet other requirement detailed in 40 CFR 280.21, by December 1998, or close and/or replace the existing UST (40 CFR 280.21) ! Notify State and/or local agencies upon the installation and use of new UST systems (40 CFR 280.22)
General Operating Requirements (Subpart C)	<ul style="list-style-type: none"> ! Must ensure the prevention of releases through spill and overflow control, proper corrosion protection, use of compatible materials, and appropriate repairs to the UST system (40 CFR 280.30 - 280.33) ! Reporting requirements include notification, reports of all releases (suspected and confirmed), corrective action, and permanent change in service or closure (40 CFR 280.34(a)) ! Recordkeeping requirements include documentation of corrosion controls, UST system repairs, and release detection compliance (40 CFR 280.34(b))

Figure C-9 (cont.)
Underground Storage Tank Requirements (40 CFR Part 280)

Requirements	Description
Release Detection (Subpart D)	<ul style="list-style-type: none"> ! Must provide a method or combination of methods to detect leaks and releases from the UST system (40 CFR 280.40 - 280.41) ! Must comply with release detection requirements according to the schedule set forth in 40 CFR 280.40(c) ! Owners or operators of petroleum USTs must comply with release detection requirements under 40 CFR 280.41 ! Owners or operators of hazardous substance USTs must comply with release detection requirements under 40 CFR 280.42 ! Must maintain records demonstrating compliance with release detection requirements (40 CFR 280.45)
Release Reporting, Investigation, and Confirmation (Subpart E)	<ul style="list-style-type: none"> ! Must report any suspected releases within 24 hours or another reasonable time period specified by implementing agency (40 CFR 280.50) ! Must investigate and confirm any suspected releases (40 CFR 280.52) ! Must contain and cleanup any release, and report to implementing agency (40 CFR 280.53)
Release Response and Corrective Action for UST Systems Containing Petroleum or Hazardous Substances (Subpart F)	<p>In the event of a release</p> <ul style="list-style-type: none"> ! Must notify implementing agency upon confirmation of a release and take action to prevent additional release (40 CFR 280.60, 280.61) ! Must submit report to implementing agency that summarizes initial abatement activities within 20 days (40 CFR 280.62) ! Must submit site characterization report (40 CFR 280.63) ! Must develop and implement a corrective action plan as directed by implementing agency (40 CFR 280.66)
Out-of-Service UST Systems and Closure (Subpart G)	<ul style="list-style-type: none"> ! For temporary closure, must maintain operating practices to ensure prevention of releases (40 CFR 280.70) ! Must notify implementing agency 30 days prior to permanent closure or change in service (40 CFR 280.71) ! Must maintain records to demonstrate compliance with closure requirements in accordance with 280.34 (40 CFR 280.74)
Financial Responsibility (Subpart H)	<ul style="list-style-type: none"> ! Must demonstrate financial responsibility for taking corrective action and for compensating third parties for bodily injury and property damage caused by accidental releases (40 CFR 280.90 - 280.116)

As indicated by Figure C-9, all existing USTs must add spill, overfill, and corrosion protection, close the existing UST, or replace the existing UST with a new UST by December 22, 1998 (§ 280.21). New USTs must have a suitable dielectric coating in addition to cathodic protection, and must be installed in accordance with an established code of practice and the manufacturer's instructions (§ 280.20(d)). Installation of new USTs must also be certified (§ 280.20(e)). Any facility that brings a UST into use after May 8, 1986 must submit the Notification Form prescribed in Appendix I of Part 280 (or a comparable State form) within 30 days. This form must be submitted to the State or local agency or department designated in Appendix II of Part 280 (§ 280.22).

Assessment Considerations for USTs:

- ▶ Interviews with facility personnel may cover the following:
 - Age, construction material, capacity of each tank on-site
 - Type of products stored in each tank
 - If tanks have been closed, determine whether there was contamination associated with the tank, and when and how such contamination occurred.
 - Type of corrosion protection and frequency of inspections (corrosion protection required on tanks by Dec. 22, 1998)
 - Type of overfill and spill protection
 - Inquire about release detection. Is monthly inventory control and/or annual tightness testing used?
- ▶ Visual observations may be used to determine if any spills or overfills have occurred that have not been remediated immediately. Look for USTs that may have gone unreported. Fill and/or vent pipes are an indication of an UST.
- ▶ Document reviews should consist of Notifications for UST systems, reports of releases (suspected releases), spills and overfills, initial site characterization and corrective action plans, notifications of permanent closure, corrosion expert's analysis if corrosion protection is not used, documentation of operation of corrosion protection equipment, recent compliance with leak detection requirements (including daily inventory sheets with monthly reconciliation), and results of site investigations.

Evaluating Compliance

There are several types of RCRA inspections which differ based upon the purpose, facility status, and probable use of the inspection results. The compliance evaluation inspection (CEI) is the primary mechanism for assessing RCRA compliance, however, and is the model for a RCRA assessment used in this Appendix. The various types of RCRA inspections and basic forms for preparing for and conducting RCRA inspections are included in EPA's RCRA Inspection Manual.¹ In addition, a screening assessment may be conducted by non-RCRA inspectors. See the sample screening checklist in Appendix E.

During the CEI, the inspector examines areas of the facility where hazardous waste is generated and stored to determine compliance with the applicable storage, labeling and handling requirements, and reviews all required records, including: manifests, Land Disposal Restrictions (LDR) Forms, appropriate plans and reports, training and

certification records, and other documentation. Record review provides insight into the hazardous waste handling practices over the inspection period.

Under Section 3006 of RCRA, EPA may authorize a State to administer and enforce a State hazardous waste program in lieu of the federal Subtitle C program. States may include more stringent requirements than Federal regulations in their authorized program. States typically receive authorization incrementally, consistent with the gradual implementation of the federal RCRA program, due largely to the lag time between federal promulgation of Subtitle C standards, and development and adoption of equivalent standards by the States. There are also different levels of State authorization. States may be granted primacy for the base RCRA program (the pre-HSWA RCRA requirements), for land disposal requirements, and for the RCRA corrective action program. Where a facility is subject to joint federal/State authority, inspections may be conducted by both EPA and/or State inspectors. Inspectors who inspect areas not under their jurisdiction and identify conditions of non-compliance should report those conditions to the agency with jurisdiction for further action.

Assessment Preparation

Assessment preparation is discussed at length in Section 3 of this manual. Adequate preparation will provide the inspector with background information necessary to conduct an accurate assessment. Recommended preparation steps and step objectives specific to RCRA assessments are included in Figure C-10.

Figure C-10
Assessment Preparation Summary

Recommended Steps	Objectives
Define Scope of Assessment	<ul style="list-style-type: none"> ! Define Assessment Objectives <ul style="list-style-type: none"> ▸ To evaluate general compliance ▸ To verify accuracy/completeness of permit ▸ To respond to citizen complaints ▸ To identify root cause of problem and/or evaluate effectiveness of corrective actions ▸ To develop information to support/respond to enforcement action ▸ To observe required sampling/testing ▸ To audit compliance monitoring systems ! Determine Assessment Type <ul style="list-style-type: none"> ▸ Compliance Evaluation Inspection (CEI) ▸ Case Development Inspection (CDI) ▸ Comprehensive Groundwater Monitoring Evaluation (CME) ▸ Compliance Sampling Inspection (CSI) ▸ Operation and Maintenance Inspection (O&M) ▸ Laboratory Audit ! Identify needed preparation and appropriate inspection activities

Figure C-10 (cont.)
Assessment Preparation Summary

Recommended Steps	Objectives
Review Facility File	<ul style="list-style-type: none"> ! Review facility file, including past inspection reports, appropriate permits, correspondence, and enforcement file (such as obligations under orders and consent decrees) ! Develop and maintain separate facility inspection file
Coordinate/Schedule Inspection	<ul style="list-style-type: none"> ! Identify interested offices or agencies ! Determine whether the inspection will be a joint effort ! Consult compliance officer/agency <ul style="list-style-type: none"> ▸ Inquire about pending enforcement issues
Review Applicable Regulations	<ul style="list-style-type: none"> ! Identify and review applicable regulations, as determined through file review ! Obtain and understand relevant amendments to RCRA standards ! Determine State/Federal jurisdiction of new regulations, amendments
Develop Assessment Plan and Appropriate Checklist(s)	<ul style="list-style-type: none"> ! Develop a plan on how to proceed during on-site assessment, highlight: <ul style="list-style-type: none"> ▸ Site-specific areas that need to be resolved, outstanding violations or enforcement ▸ Processes generating waste, waste accumulation areas ! Review existing checklists, determine their usefulness and modify where necessary
Identify Necessary Equipment	<ul style="list-style-type: none"> ! Identify/obtain necessary equipment based on the type of assessment, <u>e.g.</u>, camera, fieldbook
Complete Pre-Assessment Worksheet	<ul style="list-style-type: none"> ! Complete pre-assessment worksheet <ul style="list-style-type: none"> ▸ Highlight areas of concern and/or unresolved violations ▸ Make appropriate changes to pre-assessment sheet

Worksheets are useful tools for organizing the pre-assessment information gathering stage. Worksheets may also identify areas of concern and/or questions that should be explored during the assessment. An example of a pre-assessment worksheet is included as Figure C-11. Any unresolved issues should be noted on an interview sheet and addressed accordingly.

Figure C-11
Pre-Assessment Worksheet

Completed	Pre-Assessment Tasks	Information Source
Obtain and Review Facility Information		
	Schematics of Process/Production Rates/Wastes	Facility File
	Manifest History	Facility File
	Previous Inspection Reports	Facility File
	Correspondence	Facility File
	Annual/Biannual Reports	Facility File
	Notification Form	Facility File
	Appropriate Permits	Permit File
	Permit Status	Permit Writer
	Facility Contact Name, Title, Phone and Fax Number	Facility File Previous Inspection Reports
Obtain and Review Enforcement Regulatory Information		
	NOVs, LOWs	Enforcement File
	Facility Responses	Enforcement File
	Consent Decrees/Orders	Enforcement File
	Compliance History	RCRIS
	Enforcement Status (if ongoing)	Enforcement File
	Review Pertinent and New Regulations	Regulations (CFR Fed Reg)
	Determine Jurisdiction	Regulations (Fed Reg)
	Identify and Contact Interested Offices and/or Agencies	N/A
Develop a Plan on How to Proceed with Assessment		
	Site specific area to be observed	Past Inspection Reports
	Process generating waste/waste accumulation area	Past Inspection Reports
	Past/outstanding violations	Facility File Enforcement File
	Review Existing Checklists, Determine Usefulness -- Modify Where Necessary	N/A
	Identify and Collect Necessary Inspection Equipment	N/A
	Schedule Inspection	N/A

Conducting the Assessment

With the pre-assessment steps completed, the inspector is ready to schedule and perform the assessment. By following the tasks listed on the pre-assessment worksheet, including developing a site-specific assessment plan and checklists, the inspector should be

well prepared to conduct a thorough assessment. Key assessment steps and elements of each step are included in Figure C-12.

Figure C-12
Key Assessment Steps and Elements

Key Steps	Elements
Opening Conference/Interview	<ul style="list-style-type: none"> ! Identify purpose of assessment ! Discuss agenda and scheduling ! Verify information on pre-assessment worksheet ! Update existing facility information <ul style="list-style-type: none"> ▸ Rate of production changes, changes in number of employees ▸ Changes in manufacturing processes (raw material inputs, process equipment, products, waste streams) ! Discuss new waste minimization/pollution prevention measures ! Discuss unresolved concerns/ongoing enforcement
Records Review	<ul style="list-style-type: none"> ! Records needed for review: <ul style="list-style-type: none"> ▸ Map/facility drawings -- prior to facility walk-through ▸ Manifests, LDR notification and certification ▸ Appropriate Records Plans -- Contingency Plan, Waste Analysis Plan, Waste Minimization Plan, Training Records, Biennial Report, Annual Reports (if applicable) ▸ Exception reports ▸ List of wastes generated, their origins, rate of generation and accumulation area (compare with pre-inspection worksheet) ▸ Facility notification forms ▸ Summary of names, titles, locations, and phone numbers of persons involved in hazardous waste program
Visual Assessment	<ul style="list-style-type: none"> ! Follow raw material (wood) through process and identify waste streams (solid and hazardous) ! Inspect points of generation and satellite accumulation, <90 day accumulation area ! Evaluate waste handling techniques and procedures ! Observe employees handling and management of hazardous wastes ! Check (randomly) solid waste containers for waste types ! Evaluate container condition, labeling, marking etc. ! Ask questions of facility personnel and the facility guide to identify any inconsistencies in procedures or gaps in facility training
Closing Conference	<ul style="list-style-type: none"> ! Identify concerns/potential violations ! Discuss questions noted during record review and/or visual inspection

By following the steps listed in Figure C-12, the inspector will be better able to identify:

- ! Wastes that should have -- but may not have been -- considered hazardous
- ! Procedures and management practices that may not be in compliance with the current regulatory requirements
- ! Steps in the management process that may result in wastes being mishandled or misidentified, and that present opportunities for spills and/or releases
- ! Unusual situations that may be encountered that vary from the facility's stated normal operating procedures that may result in potential violation

When conducting an assessment, an agency inspector should ask questions of the facility representative guiding them as well as other facility personnel, such as process operators. By questioning different personnel, the inspector may identify inconsistencies in explanations of procedures or operations that could indicate possible non-compliance. In addition, speaking with additional personnel could identify gaps or inadequacies in the facility's training program.

The inspector may want to use an appropriate checklist (see the model checklists included at the end of this Appendix). The inspector should try to complete as much of the checklist as possible during the opening conference and the record review and leave the sections blank that require visual inspection to complete. If it is cumbersome to complete the checklist during the visual inspection, the inspector is advised to carry a field notebook to record observations, and refer to the checklist for general guidance. The checklist may be completed at a later time. Sole reliance on a checklist may limit the scope and thoroughness of an inspection. The inspector should be aware of, and investigate, all relevant waste generation and management activities. The inspector should attempt to understand how the facility operates, how and where wastes are generated, managed and stored at the facility, and should rely on the record review (manifests, LDRs, etc.) to assure that the waste is being handled appropriately after it is transported off-site.

If the facility is performing a self-assessment, the inspector may record observations in a fieldbook and present the findings on a finding form. An example of a finding form is included as Figure C-13. The "Finding Information" portion of the form may be completed after the visual inspection or record review and the "Comment" section may be completed during or after the closing conference. The finding form can be completed for both negative and positive findings, as well as for management practices.

Figure C-13
Sample Finding Form

Date _____	Inspector _____	
Type of Finding(+/-) _____	Bldg/Location (if applicable) _____	
Section I - Finding Information		
1. Condition _____ _____		
2. Regulatory Cite (Fed/State) _____		
3. Finding ID Code _____	4. Problem Type _____	
5. Finding Type _____	6. Repeat Finding (Y/N) _____	
7. Rating _____		
Section II - Comments		
1. Cause(s) _____ _____		
2. Effect(s) _____ _____		
3. Suggested Solution(s) _____ _____		
4. Comments _____ _____ _____		
Key		
FINDING IDENTIFICATION CODES 3A Accumulation Points 3B TSD Facilities 3C Training 3D Waste Minimization 3E Others	PROBLEM TYPE CODES ADMINISTRATIVE A1 Records A2 Labels A3 Reports A4 Manifests A5 Lack of a permit A6 Inadequate/Missing Plan A7 Public Notifications A8 Operator Certification A9 Fire Standard A10 Program Planning A11 Sampling A12 Training A13 Other	POTENTIAL DISCHARGE P1 Operational Practices P2 Inadequate Facility P3 Inadequate Equipment/Containers P4 Other DISCHARGE D1 Excess Chemical Parameter D2 Excess Physical Parameter D3 Groundwater Contamination D4 Spill/Leak D5 Other
PROBLEM TYPE DESCRIPTIONS: DISCHARGE -- Spilling, leaking, pumping, pouring, emitting, emptying, or dumping of a pollutant that is not covered by a permit or exceeds a permit limit. POTENTIAL DISCHARGE -- Physical conditions and operating practices, if left uncorrected, could cause a discharge. ADMINISTRATIVE -- Program management and oversight issues such as plans, permits, training, records, reports, etc.		
FINDING TYPE: REGULATORY -- Involves federal, State, or local environmental requirements. MANAGEMENT PRACTICE -- Environmental procedures/policies which are good practices but are not REGULATORY OR PROCEDURAL.		
RATING: SIGNIFICANT -- Requires IMMEDIATE attention, poses a direct threat to human health/safety, can "shut you down." MAJOR -- Requires less than immediate attention, could affect human health/safety, would probably result in a NOV. MINOR -- Procedural, temporary, or occasional deficiencies of no immediate consequence. MANAGEMENT PRACTICE -- Used for positive findings and when the finding is of the management practice type		

Figure C-14 provides a list of basic equipment needed to perform a CEI, noting the benefits of each. Photographs provide accurate documentation of observations, and can be a significant and informative source for review prior to future inspections, informal meetings, and in preparation of enforcement documentation.

Figure C-14
Necessary Inspection Equipment and Its Use

Necessary Equipment	Purposes/Limitations
Field Notebook	<ul style="list-style-type: none"> ! Accurate notes on <ul style="list-style-type: none"> ▸ Interviews/conversations with operators and environmental staff ▸ Observations ▸ Inspection Activity ! Photograph log <ul style="list-style-type: none"> ▸ Date, time ▸ Number of photo on roll ▸ Type of film, lens and camera ▸ Location on site (e.g., view looking northeast at . . .) ! Weather conditions ! Record list of documents reviewed ! Remember -- take notes accurately and objectively
Checklists	<ul style="list-style-type: none"> ! Remember Pre-Inspection Worksheet ! May be used as guidance tool ! May be completed during inspection ! Remember -- do not rely solely on a checklist; it is only a tool to organize your inspection and record inspection observations
Photographs	<ul style="list-style-type: none"> ! Provide "snap-shot" of facility conditions at time of inspection -- validates observations on checklist or in field notebook
Schematics/Maps	<ul style="list-style-type: none"> ! If facility is large, excellent tool for orienting oneself ! Provides graphic record, may mark map or schematic with: <ul style="list-style-type: none"> ▸ Waste generation areas ▸ Waste accumulations areas (satellite and <90 day) ▸ Spill or contamination parameters (size relative to site) ▸ Where photographs were taken (optional) ! Inspector may verify areas inspected by schematic

Maintaining and recording accurate and detailed information during the inspection is essential from an agency's viewpoint as the information may be used for enforcement and permitting. In addition, full documentation will be beneficial to future assessments to determine changes in processes and activities on-site.

After record review and visual inspection have been completed, the assessment team and facility staff should meet for a closing conference. This will offer an opportunity

for the assessment team to resolve outstanding issues, answer questions, and review findings with the facility staff. At the same time the conference offers the facility staff the opportunity to respond to the inspector's concerns or questions, and provides a final opportunity for the facility to claim confidential business information protection for information collected during the inspection.

If the facility has performed a self-assessment, the appropriate facility staff should gather and discuss the findings of the assessment team. This is an ideal opportunity for the facility to involve the operators. The operators can offer insight into day-to-day concerns and procedures that are contributing to any negative findings the assessment team may have determined. In addition, this discussion provides a chance for management and staff problem solving and for development of waste minimization initiatives. The finding form (Figure C-13) is one way of recording the self-assessment findings, cause and effect of noted problems, and suggested solutions, all of which can be included in the assessment report.

Assessment Follow-up

The appropriate follow-up to the compliance inspection will vary depending on who conducted the assessment and what findings were made, but in all cases, developing an accurate, clear and concise report outlining the findings of the inspection is important. The assessment report should include the reason for the assessment, the scope of the assessment (what was covered), the findings of the assessment, a list of issues and concerns to be followed-up on, and an indication of what additional assessments may be necessary.

If the assessment has been performed by an agency, the findings are be recorded in the standard agency format, with all supporting documentation included. Since these findings may be used as part of a future enforcement action -- presentation and accuracy are crucial.

If the inspection is a facility self-assessment, the report should address many of the same factual items included in the agency report. In addition, the finding forms should be included as an attachment. As such, the self assessment may identify the root cause of a concern or issue, and recommend corrective actions to be taken to rectify these concerns or issues.

Assessment Checklists

Figure C-15 provides a starting point for developing a specific RCRA generator checklist appropriate for a particular facility. The form is based closely on a form used by one State agency.² Many States will use their own form, and will include State-specific requirements in addition to federally-based requirements. For a mill in a particular State, the applicable State agency's form (if available) is likely the best starting point as a model for use in that State. In addition, for a screening assessment that may be conducted by non-RCRA inspectors, see the sample screening checklist in Appendix E.

Figure C-15
Example RCRA Generator Checklist

I. BASIC DATA		
Date of Inspection: _____		
Inspector: _____	Program: _____	
Weather Conditions: _____		
General Facility Information		
U.S. EPA ID No.: _____		
Site Name: _____	Street: _____	
City: _____	State: _____	Zip Code: _____
County: _____		
Facility Contact: _____	Title: _____	
Telephone No.: _____		
Type of Generator (circle appropriate type):	SQG/CESQG/LQG	
II. WASTE DATA		
WASTE STREAM/EPA ID # (Describe each waste stream including Production Process)	Generation Rate (Per Month)	Disposition
1.		
2.		
3.		
4.		
5.		
6.		
7.		
III. WALK-THROUGH ASSESSMENT PROCEDURES		
A. Pretransport, Containerization and Storage		Comments
1. Storage does not exceed 90 days (LQG) or 180 days (SQG)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Containers in good condition	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Waste compatible with container	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Figure C-15 (cont.)
Example RCRA Generator Checklist**

A. Pretransport, Containerization and Storage (cont.)		Comments
4. Containers closed in storage	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Containers storing incompatible waste separated or protected from each other by a dike, beam or wall	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Date of accumulation marked on containers	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7. Containers clearly marked "Hazardous Waste"	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Facility inspected and maintained (weekly) [Ask for, review self-inspection sheets]	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9. Daily inspection of areas subject to spills, i.e., waste handling areas [Ask for, review self-inspection sheets]	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10. Adequate aisle space available [36"]	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11. All containers packaged, marked, and labeled according to DOT requirements	<input type="checkbox"/> Yes <input type="checkbox"/> No	
B. Satellite Accumulation		Comments
1. Areas located at or near point where wastes initially accumulate and are under operator's control	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Containers clearly labeled "Hazardous Waste"	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Containers kept closed	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4. Containers in good condition	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Waste compatible with container	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Quantities accumulated not exceeding 55 gal. (1 quart acutely haz. waste)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7. Container marked identifying contents, beginning date and "full" date	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Satellite containers go to storage within 3 days of "full" date	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9. Ignitable/reactive wastes located at least 50 ft. from property line	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Figure C-15 (cont.)
Example RCRA Generator Checklist**

C. Preparedness and Prevention and Emergency Procedures		Comments
1. Facility operated and maintained to minimize possibility of an emergency	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Adequate and proper spill control, decontamination and safety equipment available (fire blankets, respirators, SCBA, absorbents, etc.) and properly tested and maintained	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Adequate water supply and fire control equipment	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4. Device in the hazardous waste operation area capable of summoning emergency assistance	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Telephone or two-way radio on-site and capable of summoning local fire or police departments	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Communication and emergency equipment tested and maintained	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7. Emergency coordinator's name and phone number posted near phone [SQG only]	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Telephone number of fire department posted near phone [SQG only]	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9. Location of fire extinguisher and spill control equipment posted near phone [SQG only]	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10. Employees familiar with waste handling and emergency procedures [SQG only]	<input type="checkbox"/> Yes <input type="checkbox"/> No	
IV. RECORD REVIEW ASSESSMENT PROCEDURES		
D. Manifests		Comments
1. Facility uses manifest system or [SQG only] wastes reclaimed under contractual agreement	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Records maintained for a 3 year period	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Manifest document ID and consecutive shipment numbers	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4. Generator's name, address and phone number	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Figure C-15 (cont.)
Example RCRA Generator Checklist**

D. Manifests (cont.)		Comments
5. All transporters' names, phone numbers, license plate #s, State & EPA ID#s	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Designated facility name, address, phone, State & EPA ID#	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7. DOT shipping name, Hazard Class and waste ID#	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Containers, quantity and specific gravity designated	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9. Manifest signed and dated	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10. Tests waste or uses knowledge of waste to determine if the waste is restricted from land disposal	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11. Appropriate LDNR notices, certifications sent under Part 268	<input type="checkbox"/> Yes <input type="checkbox"/> No	
12. Manifests returned within 35 days	<input type="checkbox"/> Yes <input type="checkbox"/> No	
13. If "No" for question #12, contacted TSDF and/or transporter [LQG only] and filed exception reports if manifest not received within 45 days (60 days for SQG)	<input type="checkbox"/> Yes <input type="checkbox"/> No	
E. Preparedness and Prevention [LQG only unless noted]		Comments
1. Arrangements with local emergency agencies [SQG only]	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Emergency coordinator(s) on premise or on call [SQG only]	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Personnel are trained to respond to emergencies including the use of alarm systems, emergency equipment and contingency plan	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4. Employees do not work in unsupervised positions until they have completed the training	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Training reviewed annually	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Program director trained in hazardous waste management procedures	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7. Personnel training plan on-site	<input type="checkbox"/> Yes <input type="checkbox"/> No	

**Figure C-15 (cont.)
Example RCRA Generator Checklist**

E. Preparedness and Prevention [LQG only unless noted] (cont.)		Comments
8. Gives job title, job description and name of employee filling each position	<input type="checkbox"/> Yes <input type="checkbox"/> No	
9. Written description of introductory and continuing training that will be given to each position	<input type="checkbox"/> Yes <input type="checkbox"/> No	
10. Documentation of training completed by personnel	<input type="checkbox"/> Yes <input type="checkbox"/> No	
11. Records of current personnel maintained until facility closure, former employee records maintained for at least three years	<input type="checkbox"/> Yes <input type="checkbox"/> No	
F. Contingency Plan [LQG only]		Comments
1. Contingency plan maintained on-site	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Plan submitted to local emergency response agencies	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Emergency coordinator on-site or on call	<input type="checkbox"/> Yes <input type="checkbox"/> No	
4. Plan describes actions personnel must take in response to fires, explosions or other releases of hazardous wastes	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Describes arrangements with emergency response agencies	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Primary emergency coordinator designated	<input type="checkbox"/> Yes <input type="checkbox"/> No	
7. Lists names, addresses and phone numbers (home and office) of emergency coordinators	<input type="checkbox"/> Yes <input type="checkbox"/> No	
8. Evacuation plan, if applicable, designates primary and secondary routes and evacuation signal	<input type="checkbox"/> Yes <input type="checkbox"/> No	
G. Used Oil Storage		Comments
1. Containers in good condition	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Containers storing used oil are not leaking	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Containers/aboveground tanks are labeled or marked clearly "Used Oil"	<input type="checkbox"/> Yes <input type="checkbox"/> No	

Figure C-15 (cont.)
Example RCRA Generator Checklist

G. Used Oil Storage (cont.)		Comments
4. Fill pipes used to transfer used oil into underground storage tanks are labeled or marked clearly "Used Oil"	<input type="checkbox"/> Yes <input type="checkbox"/> No	
5. Containers/tanks which are exposed to rainfall are closed	<input type="checkbox"/> Yes <input type="checkbox"/> No	
6. Cleaned up any spills or leaks of used oil	<input type="checkbox"/> Yes <input type="checkbox"/> No	
H. Off-Site Shipments to Approved Collection Centers		Comments
1. Used oil is transported by transporters who have obtained EPA Identification numbers	<input type="checkbox"/> Yes <input type="checkbox"/> No	
2. Transports used oil in a vehicle owned by the generator or owned by an employee of the generator	<input type="checkbox"/> Yes <input type="checkbox"/> No	
3. Transports no more than 55 gallons of used oil at any time	<input type="checkbox"/> Yes <input type="checkbox"/> No	

References:**Cited References:**

1. *Revised RCRA Inspection Manual*, OSWER Directive 9938.02b, U.S. Environmental Protection Agency, 1993.
2. *Inspection Record and Checklist* (separate forms for both Large and Small Quantity Generators), Missouri Department of Natural Resources, Form Nos. MO 780-1525 and MO 780-1802, September 1997.

Additional Available References:

3. Wagner, T.P., *The Complete Guide to the Hazardous Waste Regulations*, 2d. ed., 1991.
4. Garrett, T.L. (ed.), *The RCRA Practice Manual*, American Bar Association, 1994.
5. Skillern, F.F., *Environmental Protection Deskbook*, Chapter 5, 2d. ed., 1995.
6. *Wood Preserving Resource Conservation and Recovery Act Compliance Guide*, Chapter 3, U.S. Environmental Protection Agency (EPA-305-B-96-001), June 1996.
7. *Process-Based Self-Assessment Tool for the Organic Chemical Industry*, Appendix D, U.S. Environmental Protection Agency (EPA-305-B-97-002), April 1997.

APPENDIX D: EPCRA Regulatory and Assessment Procedures Overview

Overview

The Emergency Planning and Community Right-to-Know Act (EPCRA), also known as the Superfund Amendments Reauthorization Act (SARA) Title III, provides primarily for dissemination of information on hazardous chemicals used by, released from, or otherwise managed as waste by, a facility. There are four main functional areas under EPCRA, as shown in Figure D-1 below. All of the EPCRA requirements will likely apply to kraft pulp mills based on the size, scope and nature of the facilities. The following sections briefly summarize each area, and the final section highlights screening techniques for evaluating EPCRA compliance.

Figure D-1
EPCRA Functional Areas

Emergency Planning	<ul style="list-style-type: none">! Designate on-site facility emergency coordinator! Notify State/local emergency planning officials of facility's status and name of on-site coordinator
Emergency Notification	<ul style="list-style-type: none">! Identify hazardous substances and reportable quantity threshold for spills/leaks! Immediately notify if spill, leak or other release exceeds reportable quantities. Notify National Response Center and State/local emergency officials
MSDS and Inventory Information	<ul style="list-style-type: none">! Prepare or have available MSDS for all OSHA hazardous chemicals used on site! Submit copies of MSDS for hazardous chemicals used in excess of specified thresholds! Send copies to State/local emergency officials, along with Tier 1/Tier 2 inventory updates annually
Toxic Release Reporting	<ul style="list-style-type: none">! Report annually quantities of listed toxic chemicals entering each environmental medium, including land disposals of toxic chemicals and off-site transfers of waste containing toxic chemicals! Use standard form (Form R or Form A)! No specified calculation method applies, but fugitive releases are included

Emergency Planning

The emergency planning requirements apply if the facility has certain extremely hazardous substances above threshold quantities specified in the regulations (40 CFR Part 355). The facility must notify the State emergency response agency and local emergency planning commission (40 CFR 355.30). The facility must designate an emergency response coordinator and provide the coordinator's name to the applicable emergency response officials.

Emergency Notification

In the event of a spill, leak, or other release of a reportable quantity for a CERCLA hazardous substance or an EPCRA extremely hazardous substance, the facility generally must provide immediate notification to the State and local emergency agencies (40 CFR 355.40). If the release is of a CERCLA hazardous substance, the facility also must notify the National Response Center (NRC) ((800) 424-8802), pursuant to CERCLA and 40 CFR 302.6. EPA logs notifications to the NRC into EPA's Emergency Response Notification System (ERNS) database. The list of CERCLA hazardous substances is published at 40 CFR 302.4. The list of EPCRA extremely hazardous substances is published at 40 CFR 355 Appendix A. Figure D-2 lists several substances that are associated with kraft pulp mill operations that are included in the lists of chemicals subject to EPCRA and/or CERCLA emergency reporting. The figure also indicates the reportable quantity for each chemical. Figure D-2 is a non-exclusive list -- there likely are additional chemicals that could be released from kraft pulp mill operations that could be subject to EPCRA or CERCLA reporting. Also note that, for several of the compounds listed in Figure D-2, it would be unlikely for mills to have releases that exceed the reportable quantity threshold.

Emergency reporting is not required for certain types of exempted releases. Most important, reporting is not required for federally permitted releases as defined under CERCLA. These include releases in compliance with regulations and permits under various environmental statutes, including the Clean Air Act, Clean Water Act, and Resource Conservation and Recovery Act. See CERCLA section 101(10) for the statutory definition.

NOTE! Federally permitted releases are exempt from emergency reporting requirements. Check the EPCRA Hotline (1-800-424-9346) for possible updates and clarifications on what constitutes a federally permitted release.

In addition, for certain types of "continuous releases," special reporting procedures apply. A continuous release is one that occurs without interruption or abatement, and is stable in quantity or rate, or that is routine, anticipated, intermittent, and incidental to normal operations. In these circumstances, special regulatory notice provisions established under CERCLA apply. Those provisions include an initial telephone and written notice, an

update notice after one year, and then notices of changes in the source or composition of a release, in the normal range of the release, or any statistically significant increase in the release. In some circumstances, a facility can use the TRI Form R report (with certain additional information) as the basis for reporting these types of releases under CERCLA (but not for EPCRA). See 40 CFR 302.8 and 355.40 for further detail. Also see the EPA report *"Reporting Requirements for Continuous Releases of Hazardous Substances: A Guide for Facilities on Compliance"* (EPA 540-R-97-047).

Figure D-2
Non-Exclusive List of Chemicals Associated with Kraft Mill Operations
for CERCLA/EPCRA Emergency Reporting

Hazardous Substance	CERCLA RQ (in lbs)	EPCRA RQ (in lbs)	Hazardous Substance	CERCLA RQ (in lbs)	EPCRA RQ (in lbs)
Sulfur dioxide	-	500	Formaldehyde	100	100
Nitrogen dioxide	10	10	Hexane	5,000	-
1,4-Dichlorobenzene	100	-	Hydrochloric acid	5,000	-
2,4,5-Trichlorophenol	10	-	Hydrogen sulfide	100	100
2-Butanone (MEK)	5,000	-	Mercury	1	-
Acetaldehyde	1,000	-	Methanol	5,000	-
Acetophenone	5,000	-	Methyl chloroform	1,000	-
Acrolein	1	1	Methyl isobutyl ketone	5,000	-
Arsenic*	1	-	Methyl mercaptan	100	100
Benzene	10	-	Methylene chloride	1,000	-
Cadmium*	10	-	Phenol	1,000	1,000
Carbon tetrachloride	10	-	Propionaldehyde	1,000	-
Chlorine	10	10	Styrene	1,000	-
Chloroform	10	10	Toluene	1,000	-
Chromium*	5,000	-	Xylenes	100	-

* Not applicable if the diameter of the solid metal is ≥ 0.004 inches (100 micrometers)

Hazardous Chemical Reporting

For each hazardous chemical used at the facility and subject to the Material Safety Data Sheet (MSDS) requirement under the Occupational and Safety Health Act, the owner or operator must provide the MSDS to the state/local emergency agencies and the local fire department. In addition, the facility must provide annually a current inventory of those hazardous chemicals. At a minimum, this involves a "Tier 1" report that aggregates the hazardous chemicals by hazard category. At an agency's request, the facility also must submit a "Tier 2" report that identifies specific information on specific chemicals. A facility need not submit MSDS, or Tier 1 or 2 information on a chemical if at any one time the facility had less than 500 pounds of the chemical (if an extremely hazardous substance) or 10,000 pounds of the chemical (for all other hazardous chemicals) (40 CFR 370.20-370.28). Many kraft pulp mills likely will be required to submit Tier 2 reports because the mills are significant, large facilities. Based on a limited review of sample Tier 2 reports submitted by four kraft pulp mills, Figure D-3 provides an example, non-exclusive list of the types of materials that could be listed in a Tier 2 report for a kraft mill. The list is by process area; note that for the papermaking process in particular, mills will have a variety of additional chemicals listed in an actual report based on the types of additives and other materials used at the particular mill. Also note that for the papermaking area in particular, it appears from the example reports reviewed that mills may report the trade name of the chemicals used and not the actual chemical substance.

Toxic Release Inventory (TRI) Reporting

Covered facilities that manufacture, process, or otherwise use listed toxic chemicals above threshold quantities must file TRI reports annually, using "Form R" or "Form A" as developed by EPA (40 CFR Part 372). TRI reports estimate all releases and other waste management quantities, through all media (including air, water, and land disposals), of listed toxic chemicals. Covered facilities also must report the quantity of toxic chemicals in waste transferred offsite. Currently, the TRI list includes over 600 chemicals and chemical categories.

The regulations (40 CFR Part 372) do not require that releases be calculated in any particular manner for TRI reporting purposes, nor does EPCRA establish any monitoring or testing requirements to support TRI reporting. Instead, a facility may rely on existing information and estimates to prepare TRI reports. For the kraft pulp sector, recent audits suggest that mills are using estimation models and techniques developed by the National Council of the Paper Industry for Air and Stream Improvement, Inc. (NCASI) to develop release information for TRI reporting.

Figure D-3
Example List of EPCRA Tier 2 Report Chemicals (by Process Area)

Process Area	Substances	
Kraft Pulping	<ul style="list-style-type: none"> ! Anthraquinone ! Antifreeze ! Black/White Liquor ! Gasoline ! Hydrochloric Acid (HCl) ! Hydrogen Sulfide (H₂S) ! Oil-Based Defoamer ! Paraffinic/Naphthalenic Solvent 	<ul style="list-style-type: none"> ! Propane, Liquid ! Sodium Hypochlorite ! Sodium Hydrosulfide ! Sodium Hydroxide (NaOH) ! Sulfuric Acid (H₂SO₄) ! Tall Oil ! Tall Oil Sodium Salt ! Turpentine
Chemical Recovery/ Causticizing	<ul style="list-style-type: none"> ! C1102 ! Caustic Soda ! Green/White Liquor ! Fuel Oil (Nos. 2, 4, or 6) ! Hydrogen Sulfide (H₂S) ! Kerosene ! Lime (CaO), Quicklime ! Lime Mud (CaCO₃), Lime Slurry 	<ul style="list-style-type: none"> ! Muriatic Acid ! Propane, Liquid ! Recycled Oil ! Salt Cake (Na₂SO₄) ! Sodium Hydrosulfide ! Sodium Hydroxide (NaOH) ! Sulfuric Acid (H₂SO₄) ! Sulfur, Liquid
Bleach Plant	<ul style="list-style-type: none"> ! Chlorine Dioxide ! Methanol (CH₃OH) ! Paraffinic/Naphthalenic Solvent ! Sodium Chlorate 	<ul style="list-style-type: none"> ! Sodium Chloride (NaCl) ! Sodium Hydroxide (NaOH) ! Sulfuric Acid (H₂SO₄)
Wastewater Treatment Plant	<ul style="list-style-type: none"> ! Ammonia, Aqueous ! Antifreeze ! Chlorine (Cl₂) ! Ferric Sulfate ! Lime Slurry 	<ul style="list-style-type: none"> ! Paraffinic/Naphthalenic Solvent ! Phosphoric Acid ! Sodium hydroxide (NaOH) ! Sulfuric Acid (H₂SO₄)
Power Plant	<ul style="list-style-type: none"> ! Coal ! Chlorine (Cl₂) ! Fuel Oil (Nos. 2, 4, or 6) ! Flyash (coal) ! Hydrogen (H₂) ! Hydrogen Sulfide (H₂S) 	<ul style="list-style-type: none"> ! Lubricating Oil ! Morpholine ! Oxygen (O₂) ! Paraffinic/Naphthalenic Solvent ! Propane, Liquid (C₄H₁₀) ! Sulfuric Acid (H₂SO₄)
Woodyard and Miscellaneous Processes	<ul style="list-style-type: none"> ! Antifreeze ! Diesel Fuel ! Gasoline ! Grease ! Hydrogen Sulfide (H₂S) ! Kerosene 	<ul style="list-style-type: none"> ! LP Gas ! Lubricating Oil ! Methyl Acetylene Propadiene ! Propane (liquid) ! Salt Cake (Na₂SO₄) ! Varsol
Papermaking	<ul style="list-style-type: none"> ! Alum ! Chlorine (Cl₂) ! Custom Sperse (various) ! Diesel Fuel ! Dye (various) ! Foamaster (various) ! Muriatic Acid 	<ul style="list-style-type: none"> ! Nalbrite (various) ! Nalco (various) ! Nopcote (various) ! Rosin Size (various) ! Sodium Hypochlorite ! Starch ! Sulfuric Acid (H₂SO₄)

Key Assessment Strategies

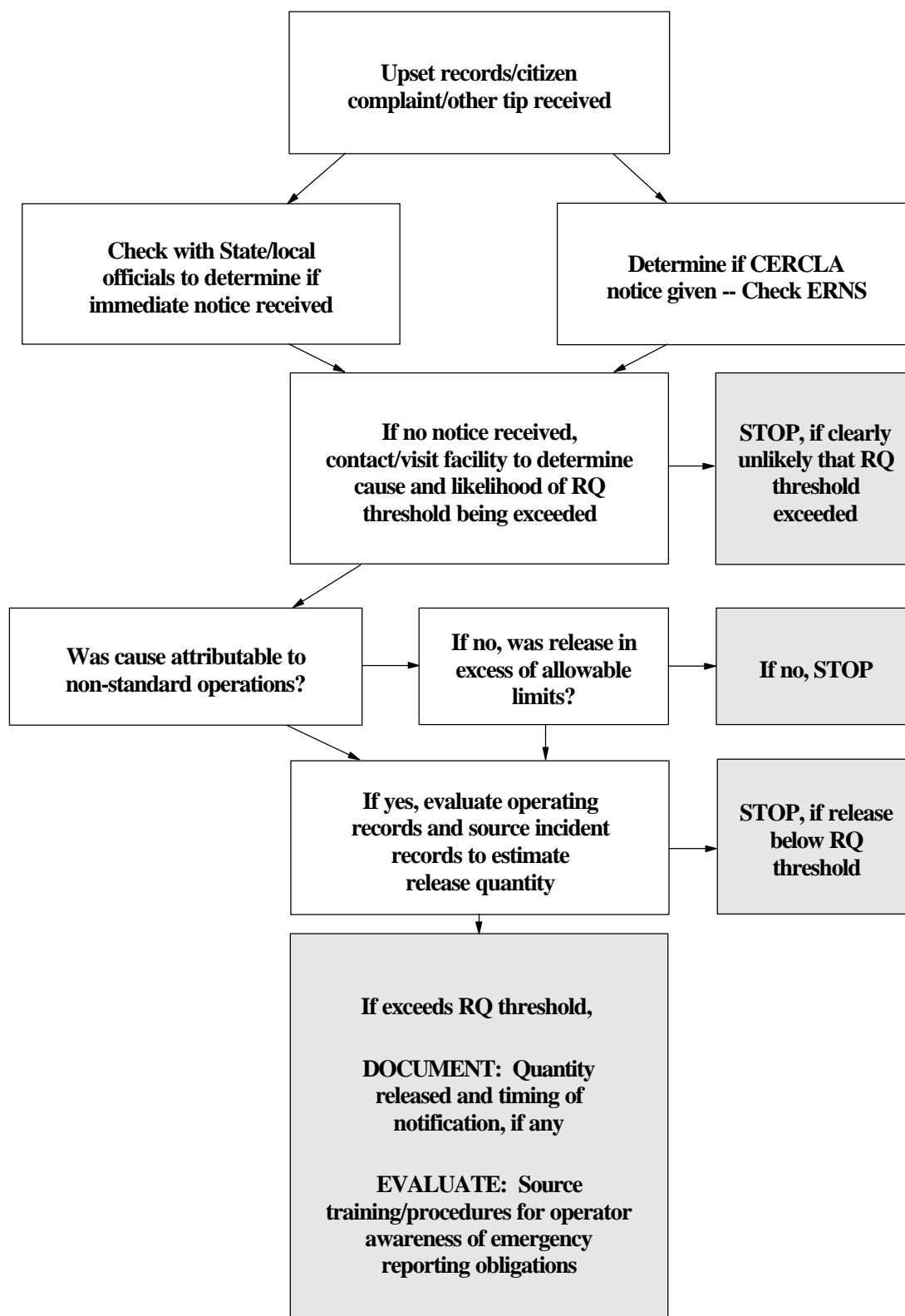
Other than for emergency notification requirements, an EPCRA compliance assessment generally involves a records review. For the facility, an assessment should begin with establishing a complete inventory of all hazardous chemicals used on site and verifying that the appropriate MSDS sheets, as well as current inventory estimates, are available. Next, the assessment should ensure that basic notifications to State and local emergency response agencies are current. Finally, the TRI "Form R" report should be checked. If NCASI or similar estimation techniques are used, the assessment should consider whether any extended process or control device upsets have occurred. If so, the facility should evaluate whether the estimates, although they may be appropriate to use generally, need to be adjusted to address the additional releases resulting from the upset conditions.

An agency inspector can screen for compliance with these same EPCRA requirements by confirming the information with the facility contact during the opening conference or just in advance of the closing conference. For an announced inspection, the inspector should ask the source to have EPCRA-related documentation ready so that this screening check can be performed without interrupting the main focus of the inspection. A screening checklist is included in Appendix E.

A mill or an agency inspector also must verify compliance with emergency notification requirements. As an initial step, mill personnel should review internal training programs and operating procedures to determine whether these elements are adequate to ensure operator awareness and understanding of these requirements. Next, mill personnel should review all plant upset and malfunction records, as well as accidental releases associated with raw material handling, and then cross-check to see if an emergency notification was made. If not, the mill should evaluate the severity of each incident to confirm that the notification requirements were not triggered. In addition, mill personnel should review whether routine releases are federally permitted and in compliance with those permits. An agency air, water or waste inspector can screen for compliance with these requirements by requesting that the source provide the relevant documentation for review (see Appendix E for basic screening checklist questions).

For an agency EPCRA inspector, a more detailed approach, similar to the appropriate approach for mill personnel, can be used to identify potential compliance concerns with emergency notification requirements. The inspector can check general mill upset reports and citizen complaints since the previous inspection, and then cross-check those incidents with notification records identified in EPA's ERNS database, records on file with State/local emergency officials, or records requested from the mill. For episodes of releases in which no notification is provided, further investigation to determine if reportable quantity thresholds were exceeded may be warranted. Figure D-4 provides an overview of the steps and considerations involved in this type of assessment.

Figure D-4
Assessment Considerations for EPCRA/CERCLA Emergency Notifications



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Overview

APPENDIX E: Example Assessment Forms

This Appendix provides a series of example assessment forms for the process areas described in Sections 4 through 9 of this manual. The forms are designed primarily for the agency inspector, as opposed to self-audit assessments. The forms generally cover the same issues discussed in the "inspection considerations" portions of each of the relevant sections. In addition, set out on the next two pages are screening checklists for EPCRA and RCRA that are not process-specific. These screening checklists may be useful for the air or water inspector if asked to screen for compliance with these other media statutes.

The forms are designed generally to evaluate whether a kraft pulp mill is in compliance, although particular items for follow-up investigation are noted where applicable. The forms are not geared toward evaluating applicability or other decisions made during the permitting process. The forms do not include the basic forms already available as part of the underlying media inspection guidance, if applicable (such as the forms available in the *NPDES Compliance Inspection Manual*).

Finally, EPA notes that the forms are intended only as generalized examples. These forms are not intended to replace mill-specific forms that may have been developed by individual inspectors or offices nor to replace other general forms that a particular agency or inspector may use. The forms also do not replace compliance checklists that may be designed for a particular regulation. Instead, the forms provide a synopsis of much of the detail found in Sections 4 through 9 of the manual, and can be used by inspectors to update or refine existing inspection forms that they may use.

Example RCRA Screening Form

(The following provides an example screening form for RCRA issues that are not process-specific; additional process-specific RCRA issues are addressed in the process-based forms where applicable)

RCRA Generator Screening Questions	
Does the facility have an EPA ID No. for Hazardous Waste Generation? If yes, provide ID #	<input type="checkbox"/> Yes <input type="checkbox"/> No ID #: _____
How are waste determinations made?	Sampling Knowledge Both
What Generator status is claimed?	LQG SQG CESQG
Are records available to document amount of generation by month?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are manifests available in organized file?	<input type="checkbox"/> Yes <input type="checkbox"/> No
What are the primary wastes generated and what process(es) generate the waste? (Provide Waste Type, Process and EPA ID #)	Type (ID): Type (ID): Type (ID): Type (ID): Type (ID): Type (ID): <i>(add more rows as necessary)</i>
Were any of the units that contain or handle wastes in (circle all that apply):	(a) poor condition (d) leaking (b) unmarked (e) cracked (c) opened (f) corroded
Describe any units identified in the preceding question.	
Is there any evidence of current or past releases? If so, please describe.	<input type="checkbox"/> Yes <input type="checkbox"/> No
Notes:	

Example EPCRA Screening Form

(The following provides an example screening form for EPCRA issues that are not process-specific; additional process-specific EPCRA issues are addressed in the process-based forms where applicable)

General EPCRA Screening Questions	
Have all hazardous chemicals been inventoried?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are Tier 1/Tier 2 inventories current?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are appropriate MSDS data sheets available?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Has the facility designated an emergency response coordinator?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Has the facility given necessary notifications to State and local emergency response agencies?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Are TRI Form R reports complete and current, including a Form R for all TRI chemicals manufactured, processed or otherwise used over the applicable threshold?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If applicable, do the Form R reports consider significant upsets/malfunctions increasing releases beyond estimates from use of standard models/guidelines?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Does the facility have an established training program and written operating procedures to ensure EPCRA compliance? <i>[Note: not a regulatory requirement; for screening purposes only]</i>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Have any releases that are not federally permitted occurred at the facility during the period of review?	<input type="checkbox"/> Yes <input type="checkbox"/> No
If releases have occurred, does the source have documentation that the releases were reported to State and local emergency agencies and to the National Response Center (or that no notice was required) ?	<input type="checkbox"/> Yes <input type="checkbox"/> No

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Pulping Process Area: Example Assessment Form

I. Air Emissions -- Basic Unit Data (include row for each separate equipment system for following categories of emissions units, as applicable)

Unit ID	LVHC or HVLC	Applicable Regs.	Primary Controls	Backup Controls
Digester(s)				
MEE(s)				
Washer(s)				
Knotter(s)				
Screen(s)				
Decker(s)				
Oxygen Delignification				
Condensates				
Other controlled points				

II. Air Inspection

- A. General:**
- (1) Units properly identified in permit? Yes No N/A
- (2) Operating rates w/i Permit Limits/Normal Op.? Yes No N/A
- (3) Identify any inoperative units: _____
- (4) Other general notes/concerns: _____

B. Uncontrolled Venting:

- (1) Evaluate records (either through records required by Cluster Rules or through mill's DCS, if available) to determine extent of uncontrolled venting over last reporting period.

Is uncontrolled venting:

- ! Within permit allowable rates? Yes No
- ! ≤ 1% of operating time? Yes No

- (2) If uncontrolled venting exceeds 1% of operating time, consider follow up investigation to determine cause(s) of problem and any corrective actions taken by source. Findings include: _____

C. Enclosure/Closed-vent System:

- | | | |
|---|-----|----|
| (1) Monitoring/inspection plan available? | Yes | No |
| (2) Logs properly filled out? | Yes | No |
| (3) Identify any problems: _____ | | |

- (4) Identify results of any portable leak checks/other inspections for these requirements conducted while on-site: _____

D. Incinerator Evaluation (if applicable):

- (1) Monitored Parameters (as applicable):

<u>Parameters</u>	<u>Actual Values</u>	<u>Allowable/Baseline Values</u>
! Temperature:	_____	_____
! TRS CEMS:	_____	_____
! HAP CMS:	_____	_____
-- Are all monitors in proper working order, with documentation of all required QA/QC?		Yes No
-- Identify problems: _____		

- (2) Identify any follow-up checks conducted: _____

E. Condensates Evaluation:

- (1) If recycling compliance option used, identify any problems noted through records review and/or visual observations: _____

- | | | |
|---|-----|----|
| (2) If condensates segregation option is used, do monitoring records demonstrate that segregation requirements are met? | Yes | No |
|---|-----|----|

- (3) Closed Collection/Closed-vent Systems:

- | | | |
|---|-----|----|
| ! Monitoring/inspection plan available? | Yes | No |
| ! Logs properly filled out? | Yes | No |
| ! Identify any problems: _____ | | |

! Identify results of any portable leak checks/other inspections for these requirements conducted while on-site: _____

(4) Steam Stripper (if applicable):

! SFR: _____ (actual) _____ (allowable/baseline)

! Methanol CMS: _____ (actual) _____ (allowable/baseline)

! Are all monitors in proper working order, with documentation of all required QA/QC? Yes No

-- Identify problems: _____

! Identify any follow-up checks conducted: _____

(5) WWTP Biological Treatment System (if applicable):

! Have all required percent reduction efficiency tests been performed? Yes No

! Have all required tests demonstrated compliance?: Yes No

! Results of most recent test: _____

! Since last inspection, have any tests been triggered by parameter value excursions? Yes No

! If so:

-- Was test passed? Yes No

-- Did mill take all appropriate corrective actions within required timeframe? Yes No

! Are all monitors in proper working order, with documentation of all required QA/QC? Yes No

-- Identify problems: _____

! Are discharge points below liquid surface? Yes No

! Identify any follow-up checks conducted or problems noted: _____

- (6) **Note:** If biological treatment system other than WWTP system is used, evaluation will be based on site-specific parameters; identify the parameters and complete the following (add lines as necessary for each parameter):

! Parameter #1: _____ (actual) _____ (allowable/baseline)

! Parameter #2: _____ (actual) _____ (allowable/baseline)

! Are all monitors in proper working order, with documentation of all required QA/QC? Yes No

-- Identify problems: _____

! Identify any follow-up checks conducted: _____

III. Water Inspection -- See BMP checklist on following pages

IV. RCRA

- (1) Are surface impoundments used to manage spent black liquor? Yes No

! If yes, what liner material is used, if any? _____

- (2) Are there indications of spills/leaks that affect the ground (such as discoloration, puddling, dead vegetation, or liquid channeling)? Yes No

! If yes to either question, consider forwarding to RCRA inspector for follow-up regarding leaks, and for a determination of whether liquor from impoundments is sent to wastewater treatment instead of being reused in process (which could affect treatment of material as a RCRA solid waste)

- (3) Are hazardous wastes generated in this area and/or are satellite accumulation sites located in this area? Yes No
Not Checked

! If yes, consider completing RCRA screening checklist at beginning of this Appendix

SPENT PULPING LIQUOR, TURPENTINE & SOAP BMP PLAN CHECKLIST	
Evaluation of the BMP Plan	
<input type="checkbox"/> Engineering review of pulping and chemical recovery systems included in Plan: <ul style="list-style-type: none"> <input type="checkbox"/> Process equipment <input type="checkbox"/> Storage tanks <input type="checkbox"/> Pipelines and pumping systems <input type="checkbox"/> Loading and unloading facilities <input type="checkbox"/> Other equipment in spent pulping liquor, soap, and turpentine service (note below) 	
<input type="checkbox"/> Selection of monitoring parameter: <ul style="list-style-type: none"> <input type="checkbox"/> Appropriate parameter selected <input type="checkbox"/> Appropriate sampling location 	
<input type="checkbox"/> Required BMP Elements included in Plan: <ul style="list-style-type: none"> <input type="checkbox"/> Return of diverted or spilled liquor to the process to the maximum extent practicable as determined by the mill <input type="checkbox"/> Establishment of preventive maintenance programs for equipment in spent pulping liquor service <input type="checkbox"/> Continuous, automated monitoring systems (i.e., alarms, conductivity monitors, or pH meters) on storage tanks, in process areas, in process sewers, in process wastewater, and in wastewater treatment plant to detect leaks, spills, and intentional diversions <input type="checkbox"/> Annual training for personnel involved with operating, maintaining, or supervising operation of equipment in spent pulping liquor, turpentine, or soap service <input type="checkbox"/> Preparation of reports evaluating spill events not contained in the immediate process area <input type="checkbox"/> Establishment of a program to review any planned facility modifications and construction activities in the pulping and chemical recovery facilities <input type="checkbox"/> Installation of secondary containment for spent pulping liquor bulk storage tanks or an annual tank integrity testing program coupled with diversion structures <input type="checkbox"/> Installation of secondary containment for turpentine bulk storage tanks <input type="checkbox"/> Installation of curbing or diking systems for turpentine and soap processing areas <input type="checkbox"/> Wastewater treatment influent monitoring to track BMP performance and effectiveness and to detect trends in spent liquor losses (EPA has recommended that mills monitor for COD, but other parameters may be used) 	
<input type="checkbox"/> Plan updated as elements of program are implemented <ul style="list-style-type: none"> <input type="checkbox"/> Action levels updated <ul style="list-style-type: none"> <input type="checkbox"/> Lower action level <input type="checkbox"/> Upper action level 	
Notes/Concerns:	

SPENT PULPING LIQUOR, TURPENTINE & SOAP BMP PLAN CHECKLIST (cont.)	
BMP Plan Implementation	
A. Training	
Yes No N/A	1. Has the facility held annual training for personnel involved with operating, maintaining, or supervising operation of equipment in spent pulping liquor, turpentine, or soap service?
Yes No N/A	2. Is the facility achieving the training goals outlined in the BMP Plan?
Yes No N/A	3. Are records of training activities maintained for three years?
B. Repair	
Yes No N/A	1. Has the facility recorded repairs of equipment in spent pulping liquor, soap and turpentine service?
Yes No N/A	2. Has the facility implemented the control measures outlined in the BMP Plan?
Yes No N/A	3. Has the facility implemented changes to equipment to prevent reoccurrence of unintentional spent pulping liquor spills?
Yes No N/A	4. Are records of repairs maintained for three years?
C. Spills	
Yes No N/A	1. Has the facility prepared reports on each spill or intentional diversion not contained in the immediate process area?
	2. Do the reports include:
Yes No N/A	equipment involved,
Yes No N/A	circumstances leading to the incident,
Yes No N/A	effectiveness of the corrective actions taken to contain or recover the spill or intentional diversion,
Yes No N/A	plans to develop changes to equipment and operating and maintenance practices as necessary to prevent reoccurrence?
Yes No N/A	3. Has the inspector reviewed the status of planned changes with facility staff?

SPENT PULPING LIQUOR, TURPENTINE & SOAP BMP PLAN CHECKLIST (cont.)	
BMP Plan Implementation (cont.)	
D. Monitoring Systems	
Yes No N/A	1. Have storage tank alarms been installed?
Yes No N/A	2. Is the location of storage tank alarm signals (audio or visual) appropriate?
Yes No N/A	3. Do the storage tank alarm signals provide sufficient notice to allow operator response?
Yes No N/A	4. Have conductivity monitors and/or pH meters been installed in the process areas, process sewers and wastewater treatment plants?
Yes No N/A	5. Are the conductivity monitors and/or pH meters in appropriate locations?
Yes No N/A	6. Do the conductivity monitors and/or pH meters provide sufficient signal for operator response?
E. Containment Structures and Tank Integrity Testing	
Yes No N/A	1. Have curbing or diking systems for turpentine and soap processing areas been installed according to the BMP Plan?
Yes No N/A	2. Have secondary containment structures for turpentine bulk storage tanks been installed according to the BMP Plan?
Yes No N/A	3. Has the facility opted to install secondary containment structures for spent pulping liquor bulk storage tanks?
Yes No N/A	4. Have secondary containment structures for spent pulping liquor bulk storage tanks been installed according to the BMP Plan?
Yes No N/A	5. Has the facility opted to implement tank integrity testing for spent pulping liquor bulk storage tanks?
Yes No N/A	6. Is the facility using diversion structures?
Yes No N/A	7. Has the inspector reviewed the procedures used to perform tank integrity tests?
Yes No N/A	8. Are tank integrity tests conducted annually?
Yes No N/A	9. Has the inspector reviewed the results of tank integrity testing?
Yes No N/A	10. Does the permit specify minimum requirements for tank integrity testing programs?
Yes No N/A	11. Do the records of the tank integrity testing program show that the facility meets applicable permit requirements for such programs?
F. Pulping and Chemical Recovery Equipment	
Yes No N/A	1. Do records show that construction and modification activities are evaluated to consider prevention of spills and leaks during changes to pulping and chemical recovery areas?

SPENT PULPING LIQUOR, TURPENTINE & SOAP BMP PLAN CHECKLIST (cont.)	
BMP Plan Implementation (cont.)	
G. Influent Monitoring	
Yes No N/A	1. Has inspector reviewed periodic monitoring reports?
Yes No N/A	2. Do the periodic monitoring reports reveal trends which should be addressed? (Note below)
Yes No N/A	3. Has the inspector discussed trends in the monitoring data with facility staff?
Yes No N/A	4. Were lower action levels exceeded?
Yes No N/A	5. Were investigations of such exceedances conducted according to the BMP Plan?
Yes No N/A	6. Were upper action levels exceeded?
Yes No N/A	7. Were corrective actions implemented according to the BMP Plan?
Yes No N/A	8. Has the inspector discussed exceedances with facility staff?
Yes No N/A	9. Has the inspector discussed pollution prevention measures that may be implemented in response to exceedances?
Yes No N/A	10. Has the facility selected an appropriate monitoring parameter?
Yes No N/A	11. Do the sampling procedures meet applicable permit requirements?
Yes No N/A	12. Are the sampling points in appropriate locations?
Yes No N/A	13. Has the inspector collected a sample to verify the accuracy of the sampling program?
H. Notes/Concerns	

V. EPCRA

Note: Includes only process-specific EPCRA screening for emergency reporting; see general screening checklist at beginning of Appendix E.

(1) Does the facility have TRS limits for all affected emission points -- LVHC and HVLC? Yes No

(2) If yes, were there excess emission periods that were not in compliance with permit? Yes No

! If yes, consider forwarding to EPCRA inspector for further evaluation to determine if RQ threshold of 100 lb/24-hour period was exceeded for H₂S or methyl mercaptan

(3) If no, continuing release reporting may apply for unregulated points. Has source filed required report or documented that reporting does not apply? Yes No

(4) Prior to compliance dates for Cluster Rules, are all emission points subject to HAP emission limits? Yes No

(5) If no, continuing release reporting may apply for unregulated points. Has source filed required report or documented that reporting does not apply? Yes No

(6) Were there HAP excess emissions not in compliance with permit during reviewed time period? Yes No

! If yes, consider forwarding to EPCRA inspector for further evaluation of whether emissions exceeded RQ thresholds for various chemicals in HAP emissions

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Chemical Recovery Operations: Example Assessment Form

I. Air Inspection

A. General: (1) Units properly identified in permit? Yes No N/A

(2) Production Rate: _____

(3) w/i Permit Limits/Normal Op.? Yes No N/A

(4) Identify any inoperative units: _____

(5) Other general notes/concerns: _____

Emissions Units	TRS Limits	MACT Limits	PM Limits	Other Limits	Control(s)
<i>[add rows as appropriate]</i>					

B. Recovery Boiler Operations

! Point ID: _____ ! Used for NCG control?: Yes No
Backup

! Type: DCE NDCE ! Subject to NSPS? Yes No

! Process Data: Black Liquor Feed Rate: _____ Steaming Rate: _____

(1) Any periods of ESP compartment downtime since last inspection? Yes No

! If so, was process adjusted to accommodate reduced ESP capacity? Yes No
(attach documentation if requested)

(2) CEMS Data: TRS: _____ (Actual) _____ (Allowable)
O₂: _____ (Actual) _____ (Allowable)

! Are all monitors in proper working order, with documentation
of all required QA/QC? Yes No

-- Identify problems: _____

! Indicate if DCS used to obtain trend/recent data (attach any print-outs): _____

(3) VEO Results:

! Opacity levels (attach VEO form): Compliance? Yes No

! Increase (>5%) in baseline opacity?: Yes No

-- If Yes, conduct follow-up

! Excessive spikes/puffing?: Yes No

-- If Yes, check rapper operation

(4) Basic ESP Data (repeat chart for each ESP chamber):

T-R Set #	Primary Volts		Primary Amps		Secondary KVolts		Secondary Milliamps		Sparks/Minute	
	Actual	Base	Actual	Base	Actual	Base	Actual	Base	Actual	Base
1										
2										
3										
4										
5										
6										

(5) Follow-up ESP Data (if necessary):

! Apparent Rapper Operation: _____

! Component Failure Records Checks: _____

! Inlet/Outlet temperature drop: _____ (Actual) _____ (Baseline)

! Audible Indications of Air Infiltration: Yes No

! Proper hopper discharge operations: Yes No

-- Identify problems: _____

C. Smelt Dissolving Tank: Point ID: ____ Subject to NSPS? Yes No

(1) Scrubber Data

! Fan Vibration: Can you hear sounds of excessive vibration? Yes No
If so, stop inspection and inform site personnel of safety concern.

<u>Parameters</u>	<u>Actual Values</u>	<u>Baseline Values</u>
! Pressure Drop:	_____ in. H ₂ O	_____ in. H ₂ O
! Scrubber Liquid Supply Pressure:	_____	_____
! Pump Discharge Pressure:	_____	_____
! Pump Motor Current:	_____	_____
! Can you hear signs of pump cavitation?		Yes No
! Adequate nozzle maintenance procedures/activities, if applicable?		Yes No
! Physical indications of poor scrubber operation (circle as applicable)?		
-- Shell/Ductwork Corrosion	-- Mud lip at stack discharge	
-- Other (Identify): _____		

(2) If suspect TRS problem, indicate sulfur content of inlet water/scrubbing liquid: _____

(3) Other checks (Identify): _____

D. Lime Kiln Operations: ! Point ID: _____ ! NSPS? Yes No

(1) Process Data:

! Kiln Production Rate: _____	! Lime Mud Feed Rate: _____
! Fuel Firing Rate: _____	! Kiln Exit Temp: _____
! Kiln Rotation Rate: _____	

(2) Used for NCG controls: HVLC LVHC Neither Backup Only

(3) VEO Check:

! Levels in compliance (attach form)?	Yes No
! Presence of Rainout?	Yes No
! If condensing plume does not permit RM 9, indicate general visible conditions:	High Average Low

(4) CEMS Data:

! Opacity: _____ (Actual) _____ (Allowable)

! TRS: _____ (Actual) _____ (Allowable)

! O₂: _____ (Actual) _____ (Allowable)

! Monitoring QA: OK Problems (Identify): _____

! Indicate if DCS used to obtain trend/recent data (attach any print-outs): _____

(5) Kiln Operating Data:

! Any kiln downtime since last inspection? Yes No

! If so, is there documentation of TRS backup controls
being used during those periods (if applicable): Yes No! Were there periods of plant production increases since
last inspection? Yes No! If so, consider checking opacity CEMS data and pressure
drop data (for scrubber-controlled kilns) to determine
if controls properly operated during such periods.(6) Scrubber Data (Note, if ESP used, see above under
recovery boiler):

! Can you hear sounds of excessive fan vibration? Yes No

-- If so, stop inspection and inform site personnel of safety concern.

ParametersActual ValuesBaseline Values! Pressure Drop: _____ in. H₂O _____ in. H₂O

! Scrubber Liquid Supply Pressure: _____

! Pump Discharge Pressure: _____

! Pump Motor Current: _____

! Can you hear signs of pump cavitation? Yes No

! Adequate nozzle maintenance procedures/activities, if applicable? Yes No

! Physical indications of poor scrubber operation
(circle as applicable)?

-- Shell/Ductwork Corrosion

-- Mud lip at stack discharge

-- Other (Identify): _____

(7) Identify any concerns for the lime kiln: _____

E. Lime Mud Washers: Mud Feed Rate: _____ Sodium Content: _____

(1) Any checks on capture/control? Yes No

! Hood Static Pressure: _____

! Pressure Drop: _____

! Liquid Flow Rate: _____

(2) Results of VE checks: _____ (attach VEO form, if applicable)

F. Other Process Equipment (Slakers and Storage/Handling Equipment)

(1) Controls operating? Yes No

(2) Any VE concerns? Yes No

(3) Identify any other concerns/checks conducted: _____

G. Asbestos D&R

(1) Indications of recent activities likely to disturb asbestos? Yes No

(2) If yes, does the source have appropriate D&R notice/records, or documentation to support requirements applicable? Yes No

II. Other Inspection Items

A. Water

(1) Any lime mud slurries sewerred during upsets/maintenance periods? Yes No

! If yes, air inspector should forward to NPDES inspector for follow-up

(2) Are there outdoor storage and handling areas? Yes No

! If so, are they addressed in the mill's SWPP Plan? Yes No

[**Note:** Use Pulping Process Area Example Assessment Form for assessments of black liquor, soap, and turpentine management involving applicable units that may be located in chemical recovery area.]

B. RCRA

- | | | |
|---|-----|----|
| (1) Does mill have documentation that pH of liquid green liquor dregs, slaker grits and lime mud sent to landfill is <12.5? | Yes | No |
| (2) Are dregs, grits and lime mud dewatered before disposal? | Yes | No |
| (3) Does the facility have paint filter test results to document that these are dewatered, not aqueous, wastes? | Yes | No |
| (4) Are green liquor dregs, slaker grits and/or lime mud stored in a surface impoundment? | Yes | No |

! If yes, identify the liner material (if any):_____

- | | | |
|--|-----|----|
| (5) Does the mill collect, treat or manage elsewhere in the mill any stormwater or groundwater from the unit in which the dregs, grits or lime mud is stored (if so, identify location)? | Yes | No |
|--|-----|----|

! Location (if any):_____

- | | | |
|---|-------------|----|
| (6) Are hazardous wastes generated in this area and/or are satellite accumulation sites located in this area? | Yes | No |
| | Not Checked | |

! If yes, consider completing RCRA screening checklist at beginning of this Appendix

C. EPCRA

Note: Includes only process-specific EPCRA screening for emergency reporting; see general screening checklist at beginning of Appendix E.

- | | | |
|---|-----|----|
| (1) Does the facility have SO ₂ and NO _x limits for both the recovery boiler and lime kiln? | Yes | No |
| (2) If yes, were there excess emission periods that were not in compliance with permit? | Yes | No |

! If yes, consider further evaluation to determine if RQ threshold(s) exceeded

- | | | |
|---|-----|----|
| (3) If no, continuing release reporting may apply. Has source either filed required report or documented that reporting does not apply? | Yes | No |
| (4) Were there TRS excess emissions not in compliance with permit during reviewed time period? | Yes | No |

! If yes, consider further evaluation of whether TRS compounds exceed RQ of 100 lb/24-hours (for H₂S or methyl mercaptan)

Bleach Plant Operations: Example Assessment Form

I. Basic Unit Data

Bleach Line ID	Bleaching Sequence

C = Chlorine D = Chlorine Dioxide E = Sodium Hydroxide (extraction)
 H = Hypochlorite P = Peroxide Z = Ozone

II. Air Inspection

A. General

- (1) Units properly identified in permit? Yes No
- (2) Production Rate: _____
- (3) w/i Permit Limits/Normal Op.? Yes No
- (4) Identify any inoperative units: _____
- (5) Other general notes/concerns: _____

B. Bleaching System Control Systems

- (1) Bleaching System ID: _____

Scrubber Parameters:ActualAllowable

- ! pH (or Oxidation Reduction Potential):
- ! Gas Inlet Flow Rate:
- ! Scrubber Liquid Flow Rate:
- ! Chlorine Outlet CEMS:

- (2) Monitoring QA acceptable? Yes No

! Identify Problems: _____

(3) Enclosures/Closed Vent System

- | | | |
|--|-----|----|
| ! Monitoring/inspection plan available? | Yes | No |
| ! Logs properly filled out? | Yes | No |
| ! Identify any problems: _____ | | |
| _____ | | |
| ! Identify results of any portable leak checks/other inspections for these requirements conducted while on-site: _____ | | |
| _____ | | |

II. Water Inspection**A. DMR Follow-up**

- | | | |
|---|-----|----|
| (1) Did the DMRs reviewed prior to the inspection indicate violations or increasing pollutant levels for bleach plant wastewater? | Yes | No |
| (2) If yes, review causes with mill operators and identify potential causes/corrective actions taken: _____ | | |
| _____ | | |

B. Compliance Sampling Procedures

- | | | |
|--|-----|----|
| (1) Indications of increased flow rate during sampling period? | Yes | No |
| (2) For mills that still use chlorine and/or hypochlorite, were samples taken during periods when these materials were in use: | Yes | No |
| (3) Are kappa factors within normal ranges? | Yes | No |
| (4) Are temperature and pH readings across bleaching stages within normal ranges? | Yes | No |

C. Permit Accuracy

- | | | |
|--|-----|----|
| (1) Were permit mass-based limits (AOX and chloroform) based on production levels consistent with normal operation levels? | Yes | No |
| ! If no, refer issue to NPDES permit writer | | |

D. Facility Inspection

- | | | |
|---|-----|----|
| (1) Do bleaching towers/extraction stages show signs of corrosion? | Yes | No |
| (2) Any leaking from bleach plant washers or savealls? | Yes | No |
| (3) Is there excessive entrained air in sewer lines? | Yes | No |
| (4) Is there adequate documentation of sampling procedures? | Yes | No |
| (5) Are monitoring locations proper? | Yes | No |
| (6) Is the bleach plant layout consistent with schematic used to locate monitors and develop permit limits? | Yes | No |

E. Flow Monitoring

- | | | |
|---|-------------------------|----|
| (1) Monitoring locations appropriate? | Yes | No |
| (2) Monitors functioning properly? | Yes | No |
| (3) Monitor calibration frequency:_____ | Date of last test:_____ | |

! Note: Also complete relevant portions of standard *NPDES Compliance Inspection Manual* checklist.

F. Sampling Evaluation

- | | | |
|---|-----|----|
| (1) Appropriate collection methods used? | Yes | No |
| (2) Sampling handling procedures meet 40 CFR 136 requirements? | Yes | No |
| (3) Laboratory/QA: Part of overall WWTP assessment -- see Section 7 | | |

IV. RCRA

- | | | |
|--|-----|----|
| (1) Has the facility analyzed chloroform levels discharged to the WWTP, POTW, or other wastewater impoundment? | Yes | No |
|--|-----|----|

! If yes, indicate results:_____

- | | | |
|---|-------------|----|
| (2) Are hazardous wastes generated in this area and/or are satellite accumulation sites located in this area? | Yes | No |
| | Not Checked | |

! If yes, consider completing RCRA screening checklist at beginning of this Appendix

V. EPCRA

- | | | |
|---|-----|----|
| (1) Does the facility have chlorine and chloroform emission limits (such as Part 63 MACT standards) for all emission points for these pollutants at the bleach plant? | Yes | No |
| (2) If yes, were there periods of excess emissions that were not in compliance with permit? | Yes | No |

! If yes, consider further evaluation to determine if RQ threshold (10 lb/24-hour period for both substances) was exceeded.

! If no, continuing release reporting under EPCRA/EPCRA may apply. Has source either filed required report or documented that reporting does not apply? Yes No

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Wastewater Treatment Plant Operations: Example Assessment Form

I. Water Inspection

- (1) Complete and fill out NPDES Water Compliance Inspection Report (Form 3560-3)
- (2) Consider elements in the appropriate checklists in the *NPDES Compliance Inspection Manual* in developing findings for report, as applicable to scope of inspection
- (3) Consider the following additional issues:

NPDES COMPLIANCE AND ASSESSMENT CHECKLIST	
A. PERMIT VERIFICATION	
Yes No N/A	1. Permit includes appropriate limits for non-continuous discharger (if applicable).
Yes No N/A	2. Does facility co-treat municipal wastewater? If yes, verify that appropriate additional monitoring records and reports are complete and document compliance (e.g. for total/fecal coliform).
Yes No N/A	3. Do foam restrictions apply? If yes, review applicable records to verify compliance.
B. RECORDKEEPING AND REPORTING EVALUATION	
Yes No N/A	1. BMP monitoring records for black liquor, soap and turpentine management (such as COD/TOC sampling or conductivity/color continuous monitoring) are adequate.
Yes No N/A	2. If monitor records indicate BMP action levels exceeded, do records document appropriate corrective action taken?
Yes No N/A	3. Do WWTP operator records indicate liquor, soap, turpentine spills that are not recorded under BMP records?
Yes No N/A	4. Did mill prepare report of all liquor, soap or turpentine spills/intentional diversions not contained in immediate process area?
C. OPERATION AND MAINTENANCE EVALUATION	
Yes No N/A	1. Facility has procedures for notifying WWTP personnel of highly contaminated wastewater from pulping/chemical recovery area.
Yes No N/A	2. Are all monitors required by the liquor, soap and turpentine BMPs in proper operating condition? Also, indicate monitor calibration frequency/unusual results (if any):
D. SAMPLING EVALUATION	
Yes No N/A	1. Mill followed method-specified sampling procedures (see permit and Figures 7-7 and 7-8 in Section 7 of this manual).

(4) Stormwater Issues:

- | | | |
|--|-----|----|
| ! Does SWPP Plan document how WWTP runoff is addressed? | Yes | No |
| ! Do quarterly visual inspection records indicate any concerns? | Yes | No |
| ! If yes, do records document appropriate corrective action? | Yes | No |
| ! Note any concerns or issues with implementation of SWPP Plan BMPs: | | |

II. Air

- (1) If biological treatment system at WWTP used to treat condensates, use procedures in Pulping Process Example Assessment Form for evaluating compliance with Cluster Rules requirements.
- (2) Water inspector: Is discharge of hardpiping of pulping condensates occurring below liquid surface in WWTP? Yes No
- ! If no, forward to air inspector for follow up

III. RCRA

- (1) Is chloroform discharged from the WWTP? Yes No
- (2) If yes, what is the pH of the chloroform discharge? _____
- (3) Are hazardous wastes generated in this area and/or are satellite accumulation sites located in this area? Yes No
Not Checked
- ! If yes, consider completing RCRA screening checklist at beginning of this Appendix

IV. EPCRA

- (1) Check air emission estimates in the mill's Form R report for wastewater treatment emission points. For chemicals subject to EPCRA/CERCLA emergency reporting, do the emission estimates for normal operations appear to exceed applicable RQ thresholds for the chemicals released to the air (such as 10 lb/24-hour period for chlorine and chloroform)? Yes No

! If yes, continuing release reporting under EPCRA/CERCLA may apply unless the mill has emission limits for these compounds from these emission points. Has source either filed required report or documented that reporting does not apply? Yes No

- (2) Were there treatment plant upsets during the period reviewed or other indications that discharges exceeded permit limits? Yes No

! If yes, does the plant have records of emergency reports under EPCRA or CERCLA for periods in which the upsets/permit exceedances occurred? Yes No

! If no, forward to EPCRA inspector for follow up

- (3) Do BMP spill record reports indicate potential releases of EPCRA/CERCLA hazardous substances? Yes No

! If yes, consider forwarding to EPCRA inspector for follow up on emergency reporting compliance

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Power Boiler Operations: Example Assessment Form**I. Boiler Data**

Unit ID	MMBTU/HR	Fuel(s)	Applicable Regs.	Control(s)

II. Air Inspection

- A. General:** (1) Units properly identified in permit? Yes No N/A
- (2) Operating rates w/i Permit Limits/Normal Op.? Yes No N/A
- (3) Identify any inoperative units: _____
- (4) Other general notes/concerns: _____

- B. VEO Results** (attach applicable VEO forms): Compliance? Yes No N/A

C. Boiler O&M Practices

- (1) Fuel sulfur content: _____ (actual) _____ (allowable)
- (2) Fuel type within permit limits? Yes No
- (3) Operating hours within any applicable limits? Yes No
- (4) Identify any follow-up checks or concerns: _____

D. CEMS Data

Unit ID	SO ₂	NO _x	Opacity	TRS

! Identify any CEMS operational concerns: _____

E. Control System Data (complete for each applicable system used)**ESP Controls (if used)**

(1) Electrical Parameter Data (repeat chart for each ESP chamber):

T-R Set #	Primary Volts		Primary Amps		Secondary KVolts		Secondary Milliamps		Sparks/Minute	
	Actual	Base	Actual	Base	Actual	Base	Actual	Base	Actual	Base
1										
2										
3										
4										
5										
6										

(2) Follow up ESP Data:

- ! Apparent Rapper Operation: _____
- ! Component Failure Records Checks: _____
- ! Inlet/Outlet temperature drop: _____ (Actual) _____ (Baseline) _____
- ! Audible Indications of Air Infiltration: Yes No
- ! Proper hopper discharge operations: Yes No
- Identify problems: _____

Scrubber (if used)

- (1) Can you hear sounds of excessive fan vibration? Yes No

! If yes, stop inspection and inform site personnel of safety concern.

(2) <u>Parameters</u>	<u>Actual Values</u>	<u>Baseline Values</u>
! Pressure Drop:	_____	_____
! Scrubber Liquid Supply Pressure:	_____	_____
! Pump Discharge Pressure:	_____	_____
! Pump Motor Current:	_____	_____

- (3) Can you hear signs of pump cavitation? Yes No

- (4) If nozzles used, does source have maintenance log? Yes No

! Does it appear that nozzle maintenance is being performed consistent with source's standard procedures and that no unusual increases in maintenance needs are occurring? Yes No

(5) Visible Compliance Indicators:

- ! Shell/Ductwork Corrosion? Yes No

-- If so, consider liquor pH follow-up: discuss with source)

- ! Mud lip at stack discharge point? Yes No

-- If so, indication of reentrainment problems

Fabric Filter (if used): Pulse Jet
Shaker

Reverse Air
Other: _____

(1) Parameters Actual Values Baseline Values

! Pressure Drop:	_____	_____
! Inlet Temperature:	_____	_____
! Outlet Temperature:	_____	_____
! Compresses Air Pressure:	_____	_____

(2) Audible/visible checks of cleaning system: Identify any concerns: _____

(3) Visible/audible checks for air infiltration, corrosion, hopper discharge. Identify any concerns: _____

(4) Identify any follow-up activities: _____

Multicyclones (if used):

(1) Pressure drop within normal range?	Yes	No
(2) Hopper discharge practices acceptable?	Yes	No
(3) Gas flow rates near nominal design rates?	Yes	No
(4) Identify any concerns:	_____	

F. Asbestos D&R

(1) Indications of recent activities likely to disturb asbestos?	Yes	No
(2) If yes, does the source have appropriate D&R notice/records, or documentation to support requirements applicable?	Yes	No

III. Water Inspection**(1) Oil-fired Boilers**

- | | | |
|--|-----|----|
| ! Is SPCC plan required? | Yes | No |
| ! If yes, is the SPCC plan available for inspection? | Yes | No |
| ! Has the facility recorded any recent spills, leaks, or similar events? | Yes | No |
| ! If yes, forward to water inspector for follow up | | |
| ! Observe containment curbs/other measures for tank storage; are there any obvious problems (applicable to SPCC and storm water compliance)? | Yes | No |
| ! Identify any concerns/comments: _____ | | |

(2) Storm Water Issues

- | | | |
|---|-----|----|
| ! Is the SWPP plan available for inspection? | Yes | No |
| ! Does the SWPP plan include following BMPs for power boiler operations, as applicable (circle all that apply)?
[See Section 9 for general SWPP plan checklist] | | |
| -- Fugitive dust control, especially for coal handling
-- Delivery/residue hauling vehicles
-- Fuel oil/chemical unloading operations
-- Storage tanks and facilities
-- Ash loading
-- Other spills and leaks | | |
| ! Does the mill have records of any required monitoring? | Yes | No |
| ! For coal-fired boilers, observe coal pile runoff/runoff control procedures and note any obvious problems or concerns: _____ | | |

IV. RCRA

- | | | |
|---|-------------|----|
| (1) Does the facility burn any hazardous waste, used oil, or hazardous waste liquids in the power boilers? | Yes | No |
| ! If yes, identify material burned: _____ | | |
| (2) Are hazardous wastes generated in this area and/or are satellite accumulation sites located in this area? | Yes | No |
| | Not Checked | |
| ! If yes, consider completing RCRA screening checklist at beginning of this Appendix | | |

V. EPCRA Inspection

Note: Includes only process-specific EPCRA screening for emergency reporting; see general screening checklist at beginning of Appendix E.

- | | | |
|--|-----|----|
| (1) Does the facility have SO ₂ and NO _x limits for each power boiler? | Yes | No |
| (2) If yes, were there excess emission periods that were not in compliance with permit? | Yes | No |

! If yes, consider further evaluation to determine if RQ threshold(s) exceeded)

- | | | |
|---|-----|----|
| (3) If no, continuing release reporting may apply. Has source either filed required report or documented that reporting does not apply? | Yes | No |
|---|-----|----|

- | | | |
|---|-----|----|
| (4) If used for NCG control, were there TRS excess emissions not in compliance with permit during reviewed time period? | Yes | No |
|---|-----|----|

! If yes, consider further evaluation of whether TRS compounds exceed RQ of 100 lb/24-hours (for H₂S or methyl mercaptan)

Woodyard, Papermaking and Other Operations: Example Assessment Form**I. Air Inspection**

(1) Woodyard Operations:

- | | | |
|--|-----|----|
| ! Are there any fugitive dust problems observed? | Yes | No |
| ! If permit requirements apply for fugitive dust control, are all required control methods in operation? | Yes | No |
| ! If water spray system used, is spray pattern appropriate? | Yes | No |
| ! Water pressure (if applicable): _____ (observed) _____ (baseline) | | |
| ! Water flow rate (if applicable): _____ (observed) _____ (baseline) | | |

(2) Other Operations:

- | | | |
|---|-----|----|
| ! Does the mill have industrial process refrigeration subject to section 608 (stratospheric ozone protection) requirements? | Yes | No |
| ! If yes, complete checklist on next page. | | |

II. Water Inspection

(1) Does the mill use wet wood handling operations? Yes No

- | | | |
|--|-----|----|
| ! If yes, does the permit include allowances for discharges from these operations? | Yes | No |
|--|-----|----|

- ! If no, then evaluate further and forward to permit writer for follow up

(3) Identify any storm water permit concerns (use the SWPP Plan Checklist on following pages as a tool to evaluate content and implementation of plan): _____

General Section 608 Screening Questions	
(1) Does the facility have industrial process refrigeration units with CFC and/or HCFC charges of 50 pounds or greater?	<input type="checkbox"/> Yes <input type="checkbox"/> No
(2) Does the facility service, maintain, or repair this refrigeration equipment with company employees? If no, go to question number 4.	<input type="checkbox"/> Yes <input type="checkbox"/> No
(3) Do all service technicians have EPA approved technician certification? NOTE: Approved 608 technician certifications contain the following language, "[Name of person] has been certified as a [Type I, Type II, Type III and/or Universal, as appropriate] technician as required by 40 CFR part 82, subpart F."	<input type="checkbox"/> Yes <input type="checkbox"/> No
(4) Does the facility keep all maintenance records on all 50+ pound units?	<input type="checkbox"/> Yes <input type="checkbox"/> No
(5) Does that facility calculate the leak rate on all 50+ pound units? NOTE: The leak rate that triggers mandatory repairs is 35% in a 12 month period.	<input type="checkbox"/> Yes <input type="checkbox"/> No
(6) Are leaks above the allowable leak rate repaired within 30 days, or 120 days if an industrial process shut down is required?	<input type="checkbox"/> Yes <input type="checkbox"/> No
(7) If leak repairs have been conducted, was an initial verification test conducted before refrigerant was recharged into the system?	<input type="checkbox"/> Yes <input type="checkbox"/> No
(8) If leak repairs have been conducted, was a follow-up verification test conducted within 30 days of the successful initial verification test?	<input type="checkbox"/> Yes <input type="checkbox"/> No
(9) If no repairs were conducted or repairs failed, was a retrofit or retirement plan prepared and available for review?	<input type="checkbox"/> Yes <input type="checkbox"/> No
(10) Does the company own refrigerant recovery equipment?	<input type="checkbox"/> Yes <input type="checkbox"/> No
(11) Has the company submitted to EPA a recovery equipment certification form? NOTE: Ask to see a file copy.	<input type="checkbox"/> Yes <input type="checkbox"/> No
<p>Copies:</p> <ul style="list-style-type: none"> ! If any technicians are not EPA certified for 608, make a copy of at least 1 record that shows the technician performing work involving the refrigerant. ! If any no answer in questions 4, 6, 7, 8 <u>and</u> it is a reasonable amount, make a copy of available maintenance records for each 50+ pound unit receiving a no answer. ! Make a copy of any retrofit or retirement plan. 	
Notes:	

SWPP PLAN -- REVIEW OF PLAN ELEMENTS

1. Pollution Prevention Team
 - ☐ Identify specific individuals
 - ☐ Outline their responsibilities
2. Description of potential pollutant resources, including:
 - ☐ Site map indicating:
 - ☐ Drainage areas
 - ☐ Drainage patterns/outfalls
 - ☐ Structural and non-structural controls
 - ☐ Surface waters
 - ☐ Significant materials exposed to precipitation
 - ☐ The location of leaks or spills that have occurred in the last 3 years
 - ☐ Location of industrial activities exposed to precipitation including:
 - ☐ Fueling stations
 - ☐ Vehicle/equipment maintenance or cleaning areas
 - ☐ Loading/unloading areas
 - ☐ Waste treatment, storage, or disposal areas
 - ☐ Liquid storage tanks
 - ☐ Processing areas
 - ☐ Storage areas
 - ☐ A list of pollutants likely to be present in the discharges
 - ☐ Description of significant materials handled, treated, stored, or disposed of such that exposure to storm water occurred in the last 3 years
 - ☐ Description of the method and location of storage or disposal
 - ☐ Description of all material management practices
 - ☐ Description and location of existing structural and non-structural controls
 - ☐ List of significant spills and leaks that occurred in the 3 years prior to the effective date of the permit
 - ☐ Summary of existing storm water sampling data
 - ☐ Description of areas with a high potential for significant soil erosion
 - ☐ A narrative summarizing potential pollutant sources
3. A description of appropriate measure and controls, including:
 - ☐ Good housekeeping procedures
 - ☐ Preventive maintenance procedures
 - ☐ Spill prevention and response procedures
 - ☐ Inspection procedures
 - ☐ Employee training program
 - ☐ Recordkeeping and internal reporting procedures
 - ☐ Non-storm water discharge certification or failure to certify non-storm water discharge certification
 - ☐ Identify authorized non-storm water discharges and appropriate controls
 - ☐ Erosion and sediment controls for areas with a high erosion potential
 - ☐ A narrative consideration of traditional storm water management practices
 - ☐ Plan for implementation and maintenance of traditional measures found to be reasonable and appropriate

SWPP PLAN -- REVIEW OF PLAN ELEMENTS (cont.)

4. ☐ Annual site compliance evaluation reports (prepared after the inspection is performed) including:
 - ☐ A summary of the scope of the inspection
 - ☐ Personnel making the inspection
 - ☐ Major observations
 - ☐ Actions taken to revise the Pollution Prevention Plan
 - ☐ Certification of compliance or a list of incidents of non-compliance

5. ☐ If discharging to a large or medium municipal separate storm sewer, compliance with applicable requirements in the municipal storm water management program

6. ☐ Consistency of the storm water pollution prevention plan with other plans

7. Additional requirements for facilities subject to Emergency Planning and Community Right to Know Act (EPCRA) Section 313 requirements
 - ☐ A description of the measures used in areas where Section 313 water priority chemicals are stored, processed, or otherwise handled to:
 - Minimize the potential contact or storm water run-on with the chemicals
 - Prevent exposure of the chemicals to storm water and wind
 - ☐ A discussion of the measures taken to minimize the discharge of Section 313 water priority chemicals from the following areas:
 - ☐ Liquid storage areas
 - ☐ Non-liquid storage areas
 - ☐ Truck and railcar loading areas
 - ☐ Transfer, processing, or handling areas
 - ☐ Other areas
 - ☐ Preventive maintenance and housekeeping
 - ☐ Facility security
 - ☐ Training
 - ☐ Professional Engineer (PE) certification every 3 years

8. ☐ Assurance that any salt storage piles onsite are covered or enclosed

Notes/Comments on SWPP Plan Review:

SWPP PLAN -- REVIEW OF BMP IMPLEMENTATION			
A. FUELING			
Yes	No	N/A	1. Has spill and overflow prevention equipment been installed?
Yes	No	N/A	2. Are vehicle fuel tanks often "topped off"?
Yes	No	N/A	3. Have steps been taken to protect fueling areas from rain?
Yes	No	N/A	4. Is runoff to the fueling area minimized?
Yes	No	N/A	5. Are oil/water separators or oil and grease traps installed in storm drains in the fueling area?
Yes	No	N/A	6. Is the fueling area cleaned by hosing or washing?
Yes	No	N/A	7. Do you control petroleum spills?
Yes	No	N/A	8. Are employees aware of ways to reduce contamination of storm water at fueling stations?
			9. Where does the water drain from the fueling area?
B. MAINTAINING VEHICLES AND EQUIPMENT			
Yes	No	N/A	1. Are parts cleaned at the facility?
Yes	No	N/A	2. Has the facility looked into using nontoxic or less toxic cleaners or solvents?
Yes	No	N/A	3. Are work areas and spills washed or hosed down with water?
Yes	No	N/A	4. Are spills or materials washed or poured down the drain?
Yes	No	N/A	5. Are oil filters completely drained before recycling or disposal?
Yes	No	N/A	6. Are incoming vehicles and equipment checked for leaking oil and fluids?
Yes	No	N/A	7. Are wrecked vehicles or damaged equipment stored onsite?
Yes	No	N/A	8. Does the facility recycle any of the automotive fluids or parts?
Yes	No	N/A	9. Can the facility reduce the number of different solvents used?
Yes	No	N/A	10. Are wastes separated?
Yes	No	N/A	11. Does the facility use recycled products?
C. PAINTING VEHICLES AND EQUIPMENT			
Yes	No	N/A	1. Is care taken to prevent paint wastes from contaminating storm water runoff?
Yes	No	N/A	2. Are wastes from sanding contained?
Yes	No	N/A	3. Are parts inspected before painting?
Yes	No	N/A	4. Is the facility using painting equipment that creates little waste?

SWPP PLAN -- REVIEW OF BMP IMPLEMENTATION (cont.)			
C. PAINTING VEHICLES AND EQUIPMENT (cont.)			
Yes	No	N/A	5. Are employees trained to use spray equipment correctly?
Yes	No	N/A	6. Does the facility recycle paint, paint thinner, or solvents?
Yes	No	N/A	7. Are wastes separated?
Yes	No	N/A	8. Can the facility reduce the number of solvents used?
Yes	No	N/A	9. Does the facility use recycled products?
D. WASHING VEHICLES AND EQUIPMENT			
Yes	No	N/A	1. Has the facility considered using phosphate-free biodegradable detergents?
Yes	No	N/A	2. Are vehicles, equipment, or parts washed over the open ground?
E. LOADING AND UNLOADING MATERIALS			
Yes	No	N/A	1. Are tank trucks and material delivery vehicles located where spills or leaks can be contained?
Yes	No	N/A	2. Is loading/unloading equipment checked regularly for leaks?
Yes	No	N/A	3. Are loading/unloading docks or areas covered to prevent exposure to rainfall?
Yes	No	N/A	4. Are loading/unloading areas designed to prevent storm water runoff?
Yes	No	N/A	5. Is piping system routinely checked for leaks?
F. LIQUID STORAGE IN ABOVE-GROUND TANKS			
Yes	No	N/A	1. Do storage tanks contain liquid hazardous materials, hazardous wastes, or oil?
Yes	No	N/A	2. Are operators trained in correct operating procedures and safety activities?
Yes	No	N/A	3. Does the facility have safeguards against accidental discharge?
Yes	No	N/A	4. Are tank systems inspected, and is tank integrity tested regularly?
Yes	No	N/A	5. Are tanks bermed or surrounded by a secondary containment system?
G. INDUSTRIAL WASTE MANAGEMENT AND OUTSIDE MANUFACTURING			
Yes	No	N/A	1. Has the facility looked for ways to reduce waste at the facility?
Yes	No	N/A	2. Has the facility considered waste reduction BMPs?
Yes	No	N/A	3. Are industrial waste management and outside manufacturing areas checked often for spills and leaks?
Yes	No	N/A	4. Are industrial waste management areas or manufacturing activities covered, enclosed, or bermed?

SWPP PLAN -- REVIEW OF BMP IMPLEMENTATION (cont.)				
G. INDUSTRIAL WASTE MANAGEMENT AND OUTSIDE MANUFACTURING (cont.)				
Yes	No	N/A	5.	Are vehicles used to transport wastes to the land disposal or treatment site equipped with anti-spill equipment?
Yes	No	N/A	6.	Does the facility use loading systems that minimize spills and fugitive losses such as dust or mists?
Yes	No	N/A	7.	Are sediments or wastes prevented from being tracked offsite?
Yes	No	N/A	8.	Is storm water runoff minimized from the land disposal site?
H. OUTSIDE STORAGE OF RAW MATERIALS, BY-PRODUCTS, OR FINISHED PRODUCTS				
Yes	No	N/A	1.	Are materials protected from rainfall, runoff, and runoff?

III. RCRA

(1) Solid Waste Landfills:

- | | | |
|---|-----|----|
| ! Does the mill maintain records of all waste streams landfilled on-site? | Yes | No |
| ! For each waste stream, do the records document how the mill characterized the waste and made a determination that the waste is not hazardous? | Yes | No |
| ! Were any free liquids observed in the landfill? | Yes | No |
| ! Are all training, inspection and other recordkeeping requirements specified by permit up-to-date and available for inspection? | Yes | No |
| ! To the extent required, review available monitoring data. Within specified permit limits? | Yes | No |

-- Identify evidence of any problems: _____

- | | | |
|---|-----|----|
| ! Is leachate handling in accordance with solid waste permit? | Yes | No |
| ! If leachate sent to WWTP or storm water outfall, does NPDES permit allow for this practice? | Yes | No |
| ! Identify any other concerns, such as obvious O&M problems, signs of spills or improper unloading practices: _____ | | |

(2) Are hazardous wastes generated in this area and/or are satellite accumulation sites located in this area?

Yes No
Not Checked

- ! If yes, consider completing RCRA screening checklist at beginning of this Appendix

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